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The

Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

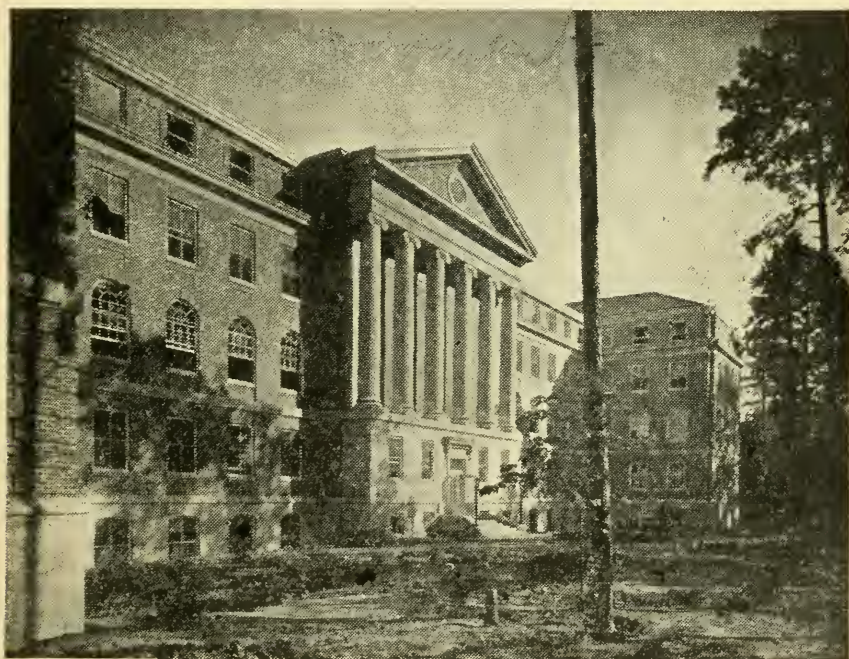
This Bulletin will be sent free to any citizen of the State upon request

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Vol. 55

JANUARY, 1940

No. 1



HEALTH OFFICERS TO BE TRAINED HERE

New Medical-Public Health Building was opened at the University of North Carolina, Chapel Hill, December 4, 1939. A distinguished array of notables participated in all-day and evening exercises, under the general supervision of Dr. W. deB. MacNider, Dean of the Medical School, assisted by Dr. Milton J. Rosenau, Director of the School of Public Health, and other members of the faculty.

Photograph courtesy Mr. R. W. Madry, Chapel Hill.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
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 Cancer
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 Chickenpox
 Diabetes
 Diphtheria
 Don't Spit Placards
 Eyes
 Flies
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German Measles
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 Measles
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 Disposal Plants
 Sanitary Privies

Scarlet Fever
 Smallpox
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 Vitamins
 Water Supplies
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SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care
 Prenatal Letters (series of nine monthly letters)
 The Expectant Mother
 Breast Feeding
 Infant Care. The Prevention of Infantile Diarrhea.
 Table of Heights and Weights

Baby's Daily Time Cards: Under 5 months;
 5 to 6 months; 7, 8, and 9 months; 10,
 11, and 12 months; 1 year to 19 months;
 19 months to 2 years.
 Diet List: 9 to 12 months; 12 to 15 months;
 15 to 24 months; 2 to 3 years; 3 to
 6 years.
 Instructions for North Carolina Midwives.

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THE Health Bulletin

PUBLISHED BY THE NORTH CAROLINA STATE BOARD OF HEALTH

Vol. 55

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Notes and Comment

By THE EDITOR

HUMBUGS—Series Continued

ONE of the most remunerative rackets carried on in North Carolina for a great many years by humbugs and fakers of every description has been in the exploitation of people who have some form of eye trouble or visual defect. A most systematic racket carried on from year to year has persisted for more than twenty years. Evidently, the group who have made this business pay them so well are affiliated and work together. It is probable that this racket is largely carried on by a bunch of crooks who have a central organization directing their activities. There is one thing that has been noted in all these years about the methods carried on, and that is that a fictitious name is used or a fictitious address is always given.

The latest report on this bunch of humbugs is sent up by Dr. W. N. McKenzie, the alert young health officer of Stanly County. Dr. McKenzie surely does not object to our publishing his letter, which follows:

"Do you have any information about a Mr. G. L. Law, who travels through the country selling glasses to those persons who are not intelligent enough to realize that eye examination is the most essential part in the purchase of glasses? This man has sold several pairs of glasses in the western part of Stanly County, and just recently we contacted a child to whom he had sold glasses; it was positively impossible for this child

to walk with the glasses on. In my opinion, this is one of the worst things we could have existing, and I would appreciate any help which you might give me regarding this matter. I might mention that Mr. Law told these people that he lived in Charlotte, N. C., and that he was listed in the telephone directory, but it was impossible to find any such person listed in the City Directory for Charlotte."

It will be noted by reading Dr. McKenzie's letter above that this quack was operating in the approved manner, in that he gave a fictitious address. Many years ago two of the most successful fakers that operated by claiming to be "eye doctors" gave an address on Fayetteville Street in Raleigh as the location of their offices on which the present City Auditorium now stands. Of course, there was not an office or a residence on that block. This man in Stanly, of course, is playing a little safer. Knowing that no one in Stanly County would have a telephone directory of Charlotte, he could not be checked on right that minute.

People will simply have to learn that when someone comes along to try to sell them something good for their health, either medicine, based on a diagnosis on the spot, glasses or anything of the kind, that they are 100 per cent fakers and humbugs. No reputable physician and no competent authority in the field of medicine is going out and promiscuously

undertake to sell eye-glasses, make diagnosis of disease and prescribe and sell so-called medicine for any particular ailment, and therefore such agents or so-called "doctors" should be immediately reported to the county Sheriff or the police.

* * * *

We are pleased to publish two or three of the papers presented at the dedication of the new medical building at the University of North Carolina, which took place on December 4th. This building is known as the Medical and Public Health Administration Building of the State University. Its erection and the provision for the establishment of the competent school of public health administration at the University marks, in the opinion of the Editor, one of the most important steps in the progress of the University throughout its whole history. The need in this section of the South has been long felt for a high-grade school of public health administration. Only one thing is now lacking, and that is a school for the training of public health nurses to be established in connection with this school or at some of the other high-grade institutions of learning in North Carolina. We hope that before another year passes that such a provision will have been made.

* * * *

The Editor was invited down to the meeting of the Southern Medical Association in Memphis, Tenn., the latter part of November to discuss a paper presented by Mr. John M. Gibson, Director of the Division of Public Health Education in the Alabama State Department of Health. Mr. Gibson is a native of Scotland County, North Carolina, and a graduate of the State University. For several years he was Editor of the *Sanatorium Sun*, the official publi-

cation of the North Carolina Sanatorium for Tuberculosis. He made a distinguished record in that work and made that publication notable for the interest and information contained in each issue. More than two years ago Mr. Gibson was made Director of the Division of Public Health Education in the Alabama State Board of Health and is doing a very satisfactory piece of work in that State.

The title of Mr. Gibson's paper was "Publicity's Place in the Public Health Program." In Mr. Gibson's paper he emphasized the fact that his work in Alabama was devoted mainly to efforts through the two now well-established publicity media, that is, the press and the radio. Mr. Gibson was inclined to emphasize the very important place that the printed word still holds in the dissemination of information. The Editor of the *Health Bulletin* agrees fully with Mr. Gibson in that opinion. When information is properly printed, it may be read and studied and re-read, whereas a talk over the radio must be caught instantly or it is gone. A speech before an audience has its disadvantages. Sometimes it is hard to understand passing statements and misinterpretation is much more evident.

The State Board of Health makes an endeavor to utilize all of these media, but up to now its main dependence is the printed word. Mr. Gibson made one statement that is so interesting and so true that we want to pass it along, to-wit: "I once knew a successful soft drink bottler in Brooklyn who used to say: 'Whenever your bottling plant smells like a bottling plant, it's time to clean it up.' That gentleman's observation might be paraphrased to say: 'Whenever your health talk sounds very much like a health talk, you'd better

re-write it'." This is sound sense.

Another statement that Mr. Gibson made which we would like to pass along to all of our workers in public health in North Carolina is this: "The public health worker is never off duty." When he made that statement in his speech in Memphis, the Editor could not help but think of the sanitary engineer over in the Health Department in Dare County, North Carolina, who recently took the trouble to write to the Governor, protesting his having a photograph made showing the Governor partaking of his favorite cold drink in a common drinking-glass, when just back of the Governor's head and showing in the picture was a stack of sterile paper cups. The point is this, that this sanitary inspector, being fully aware of the dangers of promiscuous use not only at drink stands but in restaurants and other public places of common drinking-cups or drinking-glasses, when not completely sterilized after each service was alert to the opportunity for expressing his regret that the Governor did not think of the example he was setting. Naturally, in the drug store that the Governor was being served there was possibly no question of the sanitary facilities and the safety of their drink service, but such is not the case by any means in all places in the State where people partake of their favorite foods and drink. In other words, the sanitary engineer of Dare County is on his job twenty-four hours a day, seven days in the week, which is well for Dare County.

We were pleased to renew contact with Mr. Gibson and congratulate the State of Alabama on having the services of such a competent man in its organization.

* * * *

As Director of the Maternal and Child Health Service of the State Board of Health, it was a great privilege of the Editor sometime ago to attend one of the well baby conferences or clinics in Anson County conducted by Dr. Wallin, the County Health Officer. This particular clinic was being held that morning in an old church in one of the small towns of the county. The church has been reduced in membership until it is almost ready to be abandoned, but the half-dozen faithful remaining members suggested to Dr. Wallin that when the school opened and the schoolhouse was no longer available for this work once a month that the church be opened and made available.

At the time of the Editor's visit, the church auditorium was about half full of mothers with their babies. This clinic was for white women having no private physicians, and although Anson County has one of the lowest infant death rates of any county in North Carolina, the death rate being several points below the national average and at least twenty points below the North Carolina average, Dr. Wallin believes in bringing it still lower through intensive work of this character.

The Editor has never witnessed a more thorough and careful examination by any clinician or private physician anywhere than Dr. Wallin was doing for these babies of the poor folks of that county. It was an inspiration which we needed and which we will not soon forget. We hope that the work in Anson County and in all other counties in the State may increase this year to a greater extent than ever before.

Opening New Medical School Building, University of North Carolina, Chapel Hill

GREETINGS

By CARL V. REYNOLDS, M. D.
State Health Officer

Since the birth of the Medical School of the University of North Carolina, the members of the curative branch of medicine have watched with justified and increasing pride its continued growth and the permanent place its professors and graduates have taken in the march of medical progress.

Today, the State Board of Health is thrilled to rejoicing that the preventive branch of medicine has found a place, and is now well-established as a growing institution, within the walls of this new medical building situated on the traditional campus of the University of North Carolina.

Curative medicine is necessarily individualistic in thought and administration.

Preventive medicine is collectivistic in thought and administration.

The two branches are didactically and idealistically the same, and are so interwoven and interlocking that the success or failure of one means the success or failure of the other. This is the time and place to fraternize the two schools of thought and make this new era "serve us rather than enslave us."

Never before did we need, as we do now, intelligent leadership. The basic element of any successful endeavor is a sound organization carrying forward intelligently and conscientiously the issue presented, having always in mind service before self.

In this building, being dedicated today, we have the two schools of thought.

What a grand opportunity it is to bind this misunderstood problem into a unity of thought and action and set about to watch, plan, guide and direct all medical activities in a channel that will protect our noble heritage and better serve the fundamental changes that are being made and are necessary to more adequately meet the needs of humanity.

The greatest asset in any State lies in the efficiency of the moral, mental and physical development of her womanhood and manhood.

Greetings to the University that will be the first to unify the two schools of thought and bring forth a happy solution to this perplexing problem.

GREETINGS

By WILLIAM ALLAN, M. D.
President, North Carolina Medical Society

The majority of the medical men in North Carolina got their best training on this campus. They were trained by the medical faculty that is still here, with the addition of the beloved Dr. Mangum. Even a Tar

Heel by adoption knows what has been known to everybody in the State for years, that while our young men were enrolled in the medical school they learned from close personal association with this faculty

those lessons of honesty and industry and patience and high ideals that are worth infinitely more than any technical knowledge of medicine.

During the past thirty years I have witnessed a wonderful improvement in the quality of medicine practiced in this State, and I think this medical faculty largely responsible.

FIFTY YEARS IN THE MEDICAL SCHOOL

By I. H. MANNING, M. D.

Former Dean at University of North Carolina Medical School

Mr. House, Dean MacNider, Ladies and Gentlemen:

To those of us who have had an intimate knowledge of the Medical School since its beginning, the opening of this building, spacious and splendidly equipped, is the realization of a dream—perhaps I should say a reward for many years of labor. It is an occasion for rejoicing, of looking forward, of planning for the realization of the high hope all of us have.

The temptation to look backward to its beginnings is, however, irresistible, and it may be profitable to examine the foundations, not only to find justification for this venture to higher levels, but “to learn those things of good repute” to which we should hold fast and find courage in them.

During the first decade, from 1890-1900, we recall the one lecture room in the middle entrance of the Old West Building, the partition between two bedrooms having been removed, and the one-story 14x16 frame building, dignified as the Dissecting Hall, so unsightly and unsavory that it was camouflaged in the rear of the campus and only the initiated could find it. But within these crude rooms was Dr. Whitehead, a master teacher, stimulating, inspiring, genial, lovable, and under the spell of his splendid personality the students were ob-

So, it is with sincere pleasure that as the representative of the State Medical Society, whose usefulness depends so directly on your activities here, I bring greetings and best wishes, Dr. Graham, to the medical faculty. We are as pleased as possible at your new home, and may you live long and prosper.

livious of their surroundings. We recall his restless pacing across the floor as he lectured, or the incessant rocking as he sat in his office, the informality of his relations with his students, whether in the classroom or out, all of which added to his charm and won their affection, as his profound knowledge of his subject, the clarity and conciseness of his lectures, won their admiration and confidence.

Dr. Whitehead was assisted by Dr. H. V. Wilson, painstaking, exacting, kindly but peppery, who initiated the medical students into the mysteries of microscopic anatomy; a real, genuine friend as ever a student had.

The response of the students to these two gifted teachers and unusual personalities was genuine, persistent, enthusiastic work, not eight hours, but sixteen hours a day, and seven days a week. No student could face them without having done his best, not from fear of caustic, humiliating criticism, but for the love of following such leadership. Work—honest, indefatigable, became a tradition in the Medical School—a tradition that has been recognized everywhere on the campus and has been a real contribution to its life. This has compensated for the lack of men, money and equipment and accounts for the success of the stud-

ents in the schools and in after-life, which has come in no small measure. This is the foundation upon which this school has been built; it is an invaluable legacy.

Since 1900, medical science and medical education have made revolutionary progress and millions of dollars have been spent on medical schools and hospitals. The practice of medicine now demands the highest technical skill and interpretative intelligence. The entrance requirements have advanced from a high school to three, practically four, years of college. The medical curriculum has been extended from three to four years and one or more years in a first-grade hospital. The four years of the medical course are crowded with new and subdivisions of old subjects, all definitely on the gradu-

ate level. With all of this marvelous advance, this school has kept the pace, a fact recognized and accepted by all of the medical schools from McGill to Tulane. Our students have held their own in the keen competition for school honors, in the appointments for hospital service, and finally in the general and special practice wherever they have gone. In these facts may be found full justification for this venture into broader fields.

The emphasis has obviously been placed on the teaching and training of doctors. I assume that the time has now arrived when the school will take its place in the field of research and the third chapter in its history will be written. To its success I bring the good wishes of a thousand loyal alumni.

A Conception of a School Health Education Program

By DR. D. F. SMILEY*

IF the present were the relatively simple civilization of the early Greeks, our schooling might well consist of philosophy to teach us how to think and physical training. Modern civilization has, however, long since outmoded this simple system of education. We still try to teach children how to think, but we have also added numerous factual and vocational courses. We still too often continue to use the "physical training approach," forgetting (1) that in modern life physical development per se is not nearly as important as sound health habits, sound health knowledge, sound health attitudes and sound methods of health maintenance; (2) that physical training is only a small part of what school physicians, dentists, nurses, physical

educators and specially trained health teachers can provide to protect and promote the health of school children. What is most needed in our public schools is a preventive medical program built along lines of the six-point public health program of our city health departments, i. e., communicable disease control measures, sanitation, child hygiene measures, vital statistics, public health laboratory services, health education. Assuming that this goal was adopted, what would be the essential steps in approaching it? I would suggest five steps:

1. Develop short training courses, which will prepare school physicians to attack the health problems intelligently and on the preventive medical basis.

2. Omitted.

3. Develop among the medical profession the following conceptions of school medical service: (a) It is not a treatment service; (b) it is not expected to provide each child with a meticulous medical examination annually (that is the parents' responsibility and family physician's function); (c) it is expected to provide a continuous health supervisory service based on the continuous screening by the classroom teachers; (d) it is expected to provide certain group tests, and (e) if properly organized it can be made a high-grade preventive medical service to which any doctor can be proud to contribute through a lifetime of service.

4. Train all elementary teachers in the observation of the child's physical condition and in the elements of health instruction suitable to his age.

5. Develop at our universities special training courses for health teachers who will superimpose on a foundation of science courses and professional education courses a course in health education which will prepare them (a) to present adequately to high school pupils the facts of modern preventive medicine, and (b) to keep their health knowledge abreast of the many changes and additions that are being made to health knowledge from month to month.

*Reprinted, by permission, from the *Journal of the American Medical Association*, Vol. 109, No. 11, September 11, 1937.

DIPHTHERIA RIDING HIGH

Just as we go to press, we are reminded from several sources in different sections of the State that although a law requiring immunization of all babies under twelve months of age against diphtheria was enacted on March 17th, last year, diphtheria is prevalent all throughout the State. The law is not being complied with and children are having diphtheria and dying.

We received recently the following letter from Dr. Wilburt C. Davison, Dean of the Duke Medical School:

"Can anything be done through the State Board of Health or through the County Boards of Health in regard to the appalling number of

cases of diphtheria we are having this year? I enclose a list of twenty-eight patients we have had in the last ninety days. Twenty-two of them were between the ages of six months and five years, in which, according to the law, they should have been immunized. Nine of them required tracheotomy and three of them died."

At the bottom of Dr. Davison's letter he stated that since the above letter was dictated that morning another diphtheria patient had been admitted to Duke Hospital.

On the night before this letter was received, Dr. A. S. Root, a Raleigh pediatrician, informed the Editor that the week before he and his partner had five cases of diphtheria referred to them from one family in Wake County. Dr. Root stated that in his practice cases of diphtheria were coming from the country districts, some of them in remote farming sections, and not one of them had heard of the law being passed and none of them knew about the protection afforded through immunization.

Both Doctors Davison and Root and many other practicing physicians in the State insist that more publicity must be given about the requirements of the law, more information must be disseminated and it must be carried to the sections of the State where it is needed. All of them claim that there is no way in the world that this can be done except through the efforts of practicing physicians. With just a little extra trouble, the physicians can explain to their patients when making calls in families having children, and in their offices, that the law requires immunization and that when a baby is properly immunized with at least two doses of toxoid, a potent product properly safeguarded and efficiently administered, that such a child will probably be protected from then on against diphtheria.

The columns of the *Health Bulletin* have carried information almost every month during the past few years about the diphtheria problem and offering suggestions as to how it may be eliminated. The *Health Bulletin* can do no more than it has been doing, and it is hoped that extension of information on the subject will be extended in such a manner that this time next year no

child may be living in the State who has not had the protection of immunization.

The law puts the burden of execution on the parent, but when parents in hundreds and even thousands of cases in the State do not even know about the law, let alone the possibility of protection through immunization, the first step will naturally be to get such people informed.

Heart Disease

Serial Health Letter Published in Bertie and Chowan Papers
By F. H. GARRISS, M. D., District Health Officer

MORE people per thousand die of heart disease today than did twenty-five years ago. The death rate for all other diseases has decreased during this period of time, but not so with heart disease. It has increased. Why? Don't the doctors know as much about this human ailment as they did twenty-five years ago? They do and a great deal more. Aren't the public health workers of the country trying to prevent deaths from this cause as they are from other causes? Yes, they are doing their best to prevent the diseases and defects that cause heart trouble.

To begin with, heart disease is hardly ever primary, it is generally secondary to some other disease or defective condition. It is of several different types. The muscles of the heart may be diseased and prevent the organ from contracting properly. The valves may be diseased and not open wide enough or close tight enough. In the first case, if the valve does not close properly, part of the blood that is pumped out will leak back into the heart with each pulsation or contraction of the heart. And also the nerves that go to the heart may be at fault, causing missed

or irregular contraction. All of these conditions cause the same symptoms, namely: Pain, shortness of breath and easy to tire.

What causes heart disease? A very few people are born with defective hearts. The chief causes of this defect are: The childhood diseases, diseased tonsils, any acute infectious disease, any septic infection, syphilis, alcoholism, indiscreet eating and certain slow mineral poisons. Of the childhood diseases, whooping cough heads the list and especially if the child has it before he is three years of age. The next in order is measles. We once were afraid of diphtheria and scarlet fever, but diphtheria is easily controlled and scarlet fever is very rare now and is also very mild. Whooping cough kills more children than any other childhood disease, and when it doesn't kill, it often leaves the heart damaged so that the patient develops heart disease after he is grown.

Infected or diseased tonsils are the next greatest offenders. A large healthy tonsil is harmless, but the small ragged or cryptic tonsil that one can mash pus out of is one of the most dangerous things in a child's body. In my recent examination of

over a thousand high school athletes I found diseased tonsils associated with over 75 per cent of the cases with bad hearts. The infective material in the tonsil is carried by the blood to the heart muscle and valves, where it sets up an infection that lames the heart for life if it doesn't kill in a few years.

Of the infectious diseases several can be named, such as pneumonia, typhoid fever and smallpox, but the worst of all is acute rheumatic fever. Thanks to our position under the sun, we do not have much of this disease in North Carolina. It is most prevalent in colder States. Sunshine is the cure for this dreaded disease. Of the septic infections, we have diseased tooth sockets, ear trouble, pyelitis and ordinary abscesses, but erysipelas is by far the worst.

Syphilis in a large percentage of its victims attacks the muscle and lining of the heart and large blood vessels. These people generally die suddenly before they are fifty years of age. Alcoholism and indiscreet eating generally cause disease of the muscle of the heart as secondary to liver disease.

But why is the death rate from this disease higher today than it was twenty-five years ago, while at the same time we are doing all we can to reduce it? It will be, possibly during the next generation, that the death rate will decrease. Why? Because we are today dealing with

hearts that were damaged over twenty-five years ago, when people were careless about the health of their children; when every mother thought her child should have measles and whooping cough as soon as possible and get it over with; when people thought tonsils were put in the throat for a purpose and thereby should stay there. Healthy tonsils, like a healthy appendix, should be let alone, but diseased tonsils are just as dangerous as a diseased appendix and should come out. Remember, heart disease starts during childhood and kills during active adult life.

Another reason the death rate is increasing is because we are trying to live a 1930-1940 life with an 1890-1900 heart. Those last century hearts were not intended, even if not diseased, to stand the rapid and strenuous grind of 1930-1940. That's why, today, the health workers of America are paying so much attention to the physical training of school children. We are doing everything we can to prevent childhood diseases, to remove diseased tonsils and to teach the parents and children, too, how young bodies should be fed and trained, so that when they are grown they will have healthy bodies and strong hearts that will be capable of withstanding the requirements of the next generation.

Parents, we ask you to please help us to protect the hearts of your children.

Health Problems of the Child*

By ROY NORTON, M. D., Professor of Public Health Administration
Division of Public Health, University of North Carolina

IN a consideration of the health problem for the child, we cannot escape the fact that child health is closely tied up with family health, and that family health problems are

forever inseparable from social, economic, educational and ethical factors. Food, transportation, clothing, housing and environmental sanitation of the family and the community are

vital concerns in any program of child health protection and promotion. Even after providing all these essentials, there yet remains the development of adjustments, adaptation, balance. The importance of the physical well-being of the mother in creating a healthful home environment, of the father in providing economic family needs, and of both in the maintenance of ethical standards cannot be overestimated. Child health, family health and community health progress or lag together. So also the physical, mental and spiritual well-being of the child are either promoted together or hindered together. We like to think of the child just as we think of the grownup, as an independent and free individual; yet each influences, and is influenced by, outside forces from the cradle to the grave.

Most of the improvement that has been made in our general mortality statistics and in life expectancy has been brought about by efforts aimed at improving child health through preventing infections and improving nutrition. To appreciate the vital influence of this health care for the child we have only to consider that during the lifetime of some of us life expectancy at birth has been raised from forty to sixty years, even though the expectancy of persons of fifty or sixty has not been appreciably altered. Interestingly enough, having seen what previous efforts have done in raising the standards of general health and longevity, more and more attention has gradually been shifting toward earlier stages in the individual's existence. From the school child we have turned to the pre-school age period, then to the infant, to the post-natal, obstetric and pre-natal care of the mother, and more recently, even to the pre-conception and pre-marital

hygiene of both parents. Perhaps eventually we may get around to a fuller appreciation of heredity as well as environment. Just as we find the adult of today influenced by the child of yesterday, we know that parental health today means child health tomorrow. Perhaps we may reasonably expect from these efforts as dramatic and as fundamental progress in human health and welfare as were realized from the early health work directed specifically for the growing child.

One of the most pressing problems in child health at present is bridging the gap between the accumulation of medical and health information on the one hand and bringing about the general practical application of this knowledge on the other. No one questions the vital importance of, and no one would delay progress in, providing facilities for adequate and available medical and health care for children, even though we may not all agree on methods or the order of their importance. Research must continue to show the way. The need for health education, however, is perhaps the most pressing among our Southern child health problems. When, for instance, we find one-fifth of the pediatric deaths in a State occurring among children who are not taken to physicians, that is not *prima facie* evidence of the absence of medical care due to poverty and the lack of medical resources. Families in all economic and social groups are failing to properly avail themselves of trained personnel and medical facilities. Fourteen per cent of medical costs is largely wasted since this amount is spent on patent and home medicines, which are used promiscuously.

That teaching the public to utilize present medical facilities is a good investment is well illustrated by a re-

cent study of the medical care being received by a group of adults among whom information regarding cancer has been made available. Eighty per cent of those with general chronic diseases failed to obtain medical care through ignorance and the need of education, and 10 per cent through economic reasons, while only 37.4 per cent of cancer patients went without medical care through ignorance and only 1.5 per cent for economic reasons.

Great progress has been made by directing health efforts, especially health education, toward the improvement of environmental sanitation and against common communicable diseases of children. The work of the future will be aimed more and more toward getting us all to make greater use of individual intelligence with regard to matters of personal hygiene. We are still, however, far from completing our first program of environmental sanitation, which is of the utmost importance in our Southern States, where soil conditions, climate and insect prevalence combine to complicate our problem by special hazards from malaria, hookworm and typhus, not to even mention other vital factors covered by other speakers on this program.

Perhaps in no realm of human thought do we find more misinformation and misconceptions than we do in matters relating to child health. Considerable progress has been made, but even today commercial exploiters are allowed to take advantage of human ignorance and misery. In spite of improvements in surgical technic and general hospital treatment facilities, appendicitis deaths are failing to decrease largely because of the delay and the giving of cathartics encouraged by those who are making money from the manufacture and sale of laxative drugs.

This is cited merely as an illustration of several similar health problems. Do we have a responsibility in such matters?

Some of you are perhaps wondering just how important some of these prevalent misconceptions may be. Most of you have heard mothers and even school teachers say: "It is best for a child to have these contagious childhood diseases early and be through with them before starting to school." This sounds like a very practical and perhaps sensible thought, yet few more valuable things could be done within the next few years to cut down deaths of children than eradicating this dangerous misconception and putting in its place a positive determination to postpone as long as possible a child's having any disease. An analysis of North Carolina statistics from 1934 through 1938 shows that an almost miraculous reduction in case fatality is accomplished by the mere postponement of certain diseases from ages under five years, even into the next five-year period. The case fatality for diphtheria is reduced 67 per cent; measles, 92 per cent; scarlet fever, 74 per cent; whooping cough, 97 per cent, and tuberculosis (all forms), 86 per cent. The case fatality in these diseases drops off remarkably even after the third year of life, and if a child is infected with tuberculosis in the first year of life, the risk of dying of it is over twice as great as if infected in the second year.

When we have to think of the costliness of certain procedures, it is encouraging how much can be accomplished for child health through inexpensive health education. Leaders in our public education systems proclaim the development of health as one of the primary purposes of our public schools. Are we phy-

sicians and public health workers offering them the leadership and encouragement to make the greatest use of their personnel and facilities in this matter? Are we furnishing teaching material of special interest in the different age groups? A good way to begin is to discuss the leading causes of illness or disability and the leading causes of death for the different age and race groups over a five or ten year period.

Special emphasis and effort might well be given to Negro health work and improvement in our legislation. From time immemorial, most teaching systems have been based on an attempt to impart information not likely to be gathered otherwise by the individual and too often unlikely to be useful or needed. Everyone from the youngest to the oldest is already deeply and vitally interested in health. We are fortunate in that there is no necessity for stimulating an artificial interest in health. The task of health education is greatly simplified by the fact that our hunger for health facts is spontaneous and instinctive.

In the very brief time allotted to me it is impossible to cover more than the few points which I have attempted to emphasize. The increasing democratization of health care is most encouraging. In directing our efforts toward improving child health, we cannot overlook the many factors which surround and influence the child's well-being. Having observed that today's adults enjoy a more abundant life because of even the partial and incomplete health care given yesterday's children, we are now attempting to complete the cycle by smoothing the way for tomorrow's children through intensification of health efforts and providing better preventive care for the parents and prospective parents

of today. More and more of tomorrow's children will arrive with a welcome greeting from their parents and with a community ever more ready to use a larger proportion of available resources in proving our belief that children are our most valuable crop and that child life is far more worthy of conservation than even our soil, our forests and our oil resources. In fact, conservation might well be our watchword in our consideration of tomorrow's children.

*Read before the Southern Conference on Tomorrow's Children, Atlanta, Ga., November 10, 1939.

DR. HALL MEMORIALIZES DOCTORS WHITEHEAD AND MANGUM

One of the most interesting features in the extraordinarily interesting day of activities in connection with the opening of the New Medical and Public Health Building at the University of North Carolina on December 4th was the great address at the evening session by Dr. James K. Hall, of Richmond, Va. The University has never had a more loyal friend than Dr. Hall, a native of Iredell County and a student at the University with Dr. Clarence Shore, for so long head of the State Board of Health Laboratory, and many other notable men of that period. Dr. Hall is and has always been thoroughly steeped in the traditions of the University. He is not only one of the institution's most distinguished graduates who has gone far in the profession, but he is never so happy as when lauding the virtues and accomplishments of some of his fellows.

He paid a beautiful tribute to Dr. Whitehead, who was Dean of the re-established or re-organized medical school when it was opened on a permanent basis in 1890, following the lapse of some years after the initial

efforts of Dr. Harris; and Dr. Charles S. Mangum, who was Dean of the school from 1933 to 1938. Dr. Hall gave Dr. Whitehead credit for laying the foundation for the school, and by his professional dignity set such an example for the young men who came there as students that has lasted throughout the years. Dr. Hall was a student there under Dr. Mangum, and no preceptor could dream of having any student in years to come remember him with more genuine sincerity and approbation than Dr. Hall paid to Dr. Mangum. He said that Dr. Mangum had unsurpassed ability as a teacher; he instilled in the student the value of thorough preparation. He said that Dr. Mangum was perhaps a better mixer than Dr. Whitehead and that in his opinion Dr. Mangum was perhaps the best ambassador of goodwill that the University has ever had.

He paid tribute to Dr. Mangum for cooperation with Dr. Reynolds in the establishment of the Public Health School and later in bringing Dr. Rosenau in as head of the institution.

Dr. Hall discussed the history of the Medical School as perhaps few other men could have done, because of the fact that he was relating personal experiences and passing along to his hearers the impressions of a keen mind gained through personal knowledge.

MRS. DOAK EXPLAINS THE HUMBUG BUSINESS*

To the Editor:

Your article entitled "Humbugs" in a recent issue of the *Health Bulletin*, did an injustice to the Raleigh Woman's Club and its President. Constant inquiries and criticism coming to the President as a result of your article make it necessary that

she ask you to publish the following, in justice to herself and the Club:

Your article stated that you had your "office call the President of the Raleigh Woman's Club for the purpose of making emphatic protest against the Club's auditorium being opened to this faker," referring to a woman whom you also labeled "a high-powered adventuress and quack." Also you stated that it makes you sore that this woman was able over your protest "to secure" the auditorium.

The truth is, the President of the Club was out of the city when the clubhouse was rented to the woman in question and knew nothing of its rental until two days later, just a few hours before the woman made her first lecture. The Chairman of the House Committee, acting in her proper authority under the Club's Constitution and By-Laws, rented the auditorium to the so-called "faker" in the absence of any evidence that the woman was such. Unfortunately, it was three days after the auditorium had been rented, two lectures having been made, before any message of protest from you reached the House Committee Chairman. The President never received any protest from you or your office or from anyone else about the rental or use of the clubhouse by the woman in question. Acting upon a suspicion, created by an inquiry from the Secretary of the Raleigh Y. W. C. A., a few hours before the first lecture, the President called the Secretary of the Chamber of Commerce and inquired if he knew anything of the woman scheduled to lecture at the clubhouse that afternoon. He replied that he thought her to be the same woman who was once in Asheville and he was going with the Wake County Health Officer and a plain-clothes man to hear her that afternoon and

would report later. The next day he telephoned and asked if he might come and bring the Health Officer. He did not say then or later that he was telephoning from or for "your office," or for you. The gentlemen called and reported that they had heard the woman's lecture the afternoon before and that "she kept within the law." They had a folder full of clippings about the woman, but nothing that could have served the Club as defense evidence in a suit for wrongful ejectment had the woman been ordered to vacate the auditorium and her money been refunded. When the President indicated that she would call the woman and protest certain of her activities or ask her to vacate, the Secretary said that it would not be wise to cancel the contract for use of the clubhouse unless stronger evidence was obtained. This evidence was never received from the Secretary, or anyone else, to the regret and chagrin of the officers of the Club, and it is presumed, to the State Board of Health. It was realized that we were in a predicament from which we could not legally escape. You stated in your article that the Attorney General, the Solicitor, the City Attorney and all other officers of the law were powerless to stop the woman's activities. We, too, found out that fact and therefore did not eject the woman and risk a suit we could not have won.

The officials of the Woman's Club did not wilfully, or carelessly, as your article suggests, aid and abet in putting over on the public what appears to have been a fraud. If, as you stated, some of the woman's activities, in your opinion, "constituted practicing medicine without a license from anybody in the State," it passes understanding why you did not have your organization test out the power of the law in this case

instead of leaving it to the Woman's Club to pull your chestnuts out of the fire at the risk of burning its own fingers.

The Raleigh Woman's Club has always been the friend of the State Board of Health and is proud of its record of helpfulness. If your organization will have the Attorney General prepare a law that would prove adequate to protect the Club and you in such cases, the Club will gladly help you to get it through the Legislature.

MRS. CHAS. G. DOAK,
President,
Raleigh Woman's Club.

*Editor's Note: The above communication of the President of the Raleigh Woman's Club in no way alters, changes or amends any statement made in the editorial entitled "Humbugs" published in the October 1939 issue of the "Health Bulletin."

LEGAL NOTICE

On the first day of this month the law requiring a laboratory test of the blood of every expectant mother in this State became effective. This law was passed for the protection of the unborn babies and their mothers. Its purpose is to establish early in the pregnancy the presence or absence of laboratory evidence of syphilis. If present and the fact is determined early enough, competent treatment may be instituted, and the expected baby saved from the horrors of syphilis. The mother may be cured and further ravages of the disease ended.

The burden of compliance with the law rests with the woman, but it is the duty of the attending physician, or the midwife for those who depend upon them, to see that the law is enforced.

The law applies with equal force to all pregnant women alike. None is exempt from its provisions.



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GROUP ATTENDING MATERNITY AND INFANCY CENTER GREENVILLE

The above photograph is a good illustration of one of the monthly group clinics for expectant mothers and for babies now being conducted in more than one hundred and fifty places in the State. This center at Greenville was opened in October, 1936, with one patient. The group present on December 18th, when the above photograph was made, illustrates the attendance now. Members of the clinic staff pictured above are Doctors Wilson and Haar, Nurses Matthews, Crockett and Hilton and Dr. Ennett, county health officer. It is an efficient group and results in Pitt County compare favorably with efforts made anywhere in the State in this important work.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
 Appendicitis
 Cancer
 Constipation
 Chickenpox
 Diabetes
 Diphtheria
 Don't Spit Placards
 Eyes
 Flies
 Fly Placards

German Measles
 Health Education
 Hookworm Disease
 Infantile Paralysis
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 Malaria
 Measles
 Pellagra
 Residential Sewage
 Disposal Plants
 Sanitary Privies

Scarlet Fever
 Smallpox
 Teeth
 Tuberculosis
 Tuberculosis Placards
 Typhoid Fever
 Typhoid Placards
 Venereal Diseases
 Vitamins
 Water Supplies
 Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care
 Prenatal Letters (series of nine monthly letters)
 The Expectant Mother
 Breast Feeding
 Infant Care. The Prevention of Infantile Diarrhea.
 Table of Heights and Weights

Baby's Daily Time Cards: Under 5 months; 5 to 6 months; 7, 8, and 9 months; 10, 11, and 12 months; 1 year to 19 months; 19 months to 2 years.
 Diet List: 9 to 12 months; 12 to 15 months; 15 to 24 months; 2 to 3 years; 3 to 6 years.
 Instructions for North Carolina Midwives.

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Notes and Comment

By THE EDITOR

AS these lines are written in January for those of our readers who may be interested in our editorial material to read in February, and as snow and ice and bad weather may be the rule in both months, affording more time for reading, the description we have here of one of the great institutions of the South may be as interesting to some of our readers as it has been to me.

The Editor had the privilege of attending the annual meeting of the Southern Medical Association in Memphis, Tenn., last November. The various sections, especially those on public health, were full of interesting and valuable information for all the physicians and public health workers in the South. The scientific exhibits were the best the Association has ever presented. Notable in the group was the exhibit on human bones sent down by the Orthopedic Department of Duke University Medical School. This attracted a great deal of amazement among the physicians and visitors on account of the wide scope of material presented. Dr. Baker and his associates and the Duke Medical School are to be highly commended for their patience and thoroughness in assembling this exhibit. The Dean of the Duke Medical School has informed us that work has been going on in assembling this exhibit for the past nine years.

We started out, however, to describe for our readers one of the

most notable institutions anywhere in the Southern States, and that is the Baptist Memorial Hospital and Physicians' and Surgeons' Building in Memphis. On arriving in Memphis late in the afternoon, we found that we had been mixed up on hotel reservations, and every hotel and reputable boarding house in the city was full to overflowing. It looked at one time as if we would have to start on back home to get somewhere to sleep. About this time, however, a young woman in the lobby of one of the hotels, who seemed to be head of the information service for visitors attending the meeting, overheard us mention the word Raleigh. She immediately came up and introduced herself and wanted to know if we were from Raleigh. On learning of our difficulty in getting quarters, she immediately arranged for us to be put up in the hotel division of the Baptist Hospital. This was something new to us, but we were very grateful. It turned out that the name of this woman is Miss Annie Laurie Anthony and she had graduated from Meredith College when it was located on the square near the Governor's Mansion in Raleigh. She had many friends here and had visited some of them the past summer.

On getting out to the hospital and presenting her memorandum, we found that she was highly respected in Baptist Hospital and medical circles in Memphis.

We were assigned a beautiful room with sound-proof walls, equipped as well as the most expensive modern hotel. We noted the following statement in the room assigned to us, and we can bear witness to its truthfulness: "The South's greatest hospital. The most complete service of any hospital in the United States. Five Hundred beds, splendid hotel, doctor's office building, grill, drug store, barber shop, beauty shop, flower shop—all under one roof and a garage adjoining."

The foregoing paragraph is not any exaggeration. We found on visiting about the hospital all of it to be true, and in addition, the day we were there they had six hundred employees and four hundred patients in the hospital. Medical and surgical service and clinics for the poor were provided for every day in the hospital. There was absolutely no confusion and a stranger would not have known whether he was in a hospital or a hotel most of the time. It is the best systematized and convenient institution we have ever seen. Many of the leading physicians, including some nationally known specialists, have their offices in the section of the building known as the physicians' and surgeons' division.

The visit to Memphis would have been amply repaid if we had seen

nothing connected with the great medical meeting there except the conduct of this hospital. The Editor of the *Health Bulletin* has felt for a long time that one of the needs in every city and town where people come from outside to bring their friends and loved ones to the hospital for surgical or medical treatment, is additional quarters on or near the hospital grounds, where they can find food and lodging at a reasonable price. This hospital in Memphis meets all these needs and many more. We do not know who designed this hospital, whose ideas were the prevailing ones in its construction, but we do know that in the institution the Baptist Church has a monument in that section of the country which would be hard to approach anywhere we have ever been. It is said that no patient of any denomination is ever turned away from that institution, whether or not they have the money to pay for it, and yet the millionaire can receive the very best medical and surgical service that the South affords right under the same roof with the widespread sectional service to the poor.

We are under many obligations to Miss Anthony, and we can say without any hesitation that Meredith College has a graduate in that great Southern city of whom it can well be proud.

Should Children's "Catching Diseases Be Gotten Over With" Before School Age?

By ROY NORTON, J. C. KNOX and R. T. STIMPSON

PARENTS and teachers have laid a great deal of stress on perfect attendance records in the public schools and Sunday Schools. No one would minimize the importance of thoroughness and punctuality in

child-training, but a certain amount of reasonableness should temper our attempts at teaching discipline. Some hard-driving parents feel that their child should capture all the records and prizes and some of our present

North Carolina school regulations perhaps unduly penalize the occasional health-serving absences from school.

Is there a health reason against exposing a very young child to the "catching diseases" so that he or she can be more likely to have a perfect school attendance record? Do children withstand the children's diseases better the younger they are? Most children have measles and whooping cough anyway. Isn't it desirable to expose them sometime before school age in order not to interfere with school attendance and to avoid the chance of the disease "going harder" with them when they are older? Not enough thought and study have been given to the bearing of health in these questions. Given a certain number of cases of these childhood diseases at a young age group and an equal number at a later period, is there a significant difference in the likely number of deaths (or as doctors refer to it, the case-fatality) from the diseases?

To obtain the answer to some of these vital questions, State Board of Health reports of cases of disease received by the Division of Epidemiology and death certificates received by the Bureau of Vital Statistics have been studied for the most recent five-year period. Even though there may be a closer approach to completeness in the reporting of cases in older age groups and perhaps other minor considerations, the suggestions made by the available

material are definite and clear-cut as is indicated by the following table for 1934-1938, inclusive:

DISEASE	Under Age 5 Years			5-9 Years of Age		
	Cases	Deaths	Case Fatality	Cases	Deaths	Case Fatality
Diphtheria....	4,732	694	14.7	3,593	174	4.8
Scarlet Fever	3,222	74	2.3	4,914	30	0.6
Measles.....	26,719	455	1.3	60,318	78	0.1
Whooping Cough.....	23,790	1,170	4.9	20,165	34	0.18
Totals.....	58,463	2,393	4.1	88,990	315	0.35

Analyzing these sickness and death reports received by the State Board of Health, we find that in the second five-year period of a child's life diphtheria is less fatal by 67 per cent, scarlet fever by 74 per cent, measles by 92 per cent and whooping cough by 97 per cent, and the four together by 91.5 per cent. Or looking at these reports in another way we find that when compared with the second five-year period of the child's life diphtheria during the first five years is about three times as fatal, scarlet fever four times, measles ten times, whooping cough twenty-five times and the four together about ten times as fatal in the early age group. We can also be reasonably sure that where there is so much greater loss of life there are also many more serious disabling complications and sequelae that take their toll against health and happiness all during the lives of those who survive the attack of these diseases of childhood. (Note: Take another look at the whooping cough figures!)

Twenty-Five Thousand American Babies Die Each Year from Syphilis*

By JAY M. ARENA, M. D., Durham

MOST people know vaguely that syphilis is a disease that can be transmitted from parents to their children. They do not know, however, how this infection of the children is brought about, how it can be cured if it does occur, and most important of all, how it can be prevented. Lack of knowledge is at the root of much misunderstanding concerning this particular disease. This article is one of the series approved by the Durham-Orange County Medical Society in its effort to reduce infant mortality.

If a syphilitic mother becomes pregnant, the minute corkscrew germs of the disease may circulate in her blood and reach the baby in her womb. After the baby becomes infected, several things may happen. The baby may be so poisoned by the syphilitic germs that further life and growth are impossible, and a miscarriage follows. It may happen that, though the baby may continue to live in the womb for some time, the accumulation of syphilitic poisons in its body will cause it to be born dead, often prematurely. If by chance the infant is born alive, prematurely or at full term, he may be so enfeebled that he may die in the course of a few weeks. Or the baby, if born apparently healthy, may develop the symptoms of syphilis weeks, months or years later, for example, wasting, skin rashes, sores that leave ugly scars, deformed bones, bad teeth, blindness, deafness, paralysis, and feeble-mindedness. On the other hand, many of these syphilitic children show none of these external signs or symptoms, and unless blood

tests are made during routine physical examinations, the disease may not be detected.

Syphilis in children who are innocent victims of their mother's disease, is curable only if treatment is begun early enough and is carried out systematically and thoroughly. The best time to cure the disease is before the baby is born. If a syphilitic mother begins her treatment early in pregnancy, during the first three months, infection of the baby can be prevented altogether. Treatment drives the syphilitic germs out of the mother's blood, so that they can no longer travel into the womb to the baby. Even if the syphilitic mother's treatment is not started until the fourth or fifth month of pregnancy, there is still a good chance for the baby to be healthy. No stage of pregnancy is too late, and something can still be done to help cure both the mother and baby even as late as the ninth month. From the child's point of view, one treatment of the mother before confinement is worth several given to the child after birth. Children whose mothers have received insufficient or no treatment before their birth, and who are either born with or develop symptoms of syphilis, can still be cured. Treatment should be continuous for from seventy-five to eighty-five weeks.

When a child is found to have syphilis, it is important that the mother and father and also the brothers and sisters be examined, and receive treatment if necessary, otherwise many of them may develop various distressing symptoms of this disease at some later period in life.

Diagnosis and treatment of syphilis in adults before they become parents prevent the transmission of the disease to their children. Many adults who have had syphilis neglect to obtain a complete cure and often marry before it is safe for them to do so. Again, people may not know that they have been infected with syphilis. Such persons may infect their husbands, wives, or children with the disease.

In order that syphilis in children may be prevented, every woman should have her blood tested by her physician and also have a complete examination as soon as she thinks she is pregnant. This measure is the only way at present to stamp out syphilis in children. Recently a law has been passed in the State of North Carolina requiring not only physical examination, but also a blood test (Wassermann) from a reputable laboratory, indicating the absence of venereal disease in both partners before a license to marry can be issued. This law should prove a great asset in the prevention of this preventable disease in children. Furthermore, through the State and county boards of health and the Reynolds Fund, free clinics for the treatment of syphilis have been established throughout the State. Approximately 3,000 patients are being treated in Durham today, and there is no excuse for anyone to fail to be cured if he or she will find out whether syphilis is present by having a blood test (Wassermann) done and taking adequate and prolonged treatment by their own physician or at a clinic, if they cannot afford private care. If adults would only avail themselves of the facilities available in Durham, syphilis would

disappear and children would not be infected by their parents. *Find out before it is too late, and be cured.*

*From a series of articles published in the newspapers in Durham under the sponsorship of the local Medical Society.

DISTINGUISHED VISITORS GUESTS OF THE DIVISION OF INDUSTRIAL HYGIENE

The Division of Industrial Hygiene was host in December to Dr. Gregorio D. Dizon, of the Federal Department of Health, Commonwealth of the Philippines, and Dr. Victor Nasatir, of the City of Los Angeles Health Department. These gentlemen direct the occupational disease preventive activities in their respective departments and came to North Carolina at the suggestion of the United States Public Health Service to observe the scope of such work in this State. While in North Carolina they were shown furniture plants, foundries, stone-cutting sheds, brick and tile plants, granite quarries, mining operations, mineral-grinding plants and asbestos textile plants. With respect to each type of industry both properly safeguarded and unsafeguarded work-room conditions were demonstrated. The occupational disease hazards involved were those arising from exposure to siliceous dusts and volatile solvents.

In February, Mr. Robert Lam, Industrial Hygiene Engineer of the Honolulu Health Department, Hawaii, is to be the guest of the Division of Industrial Hygiene. Mr. Lam plans to work with the Division engineers on their regular field assignments.

The coming of these visitors to the State attests the esteem with which the United States Public Health Service regards the work of our Division of Industrial Hygiene.

VITAMIN CHART—By Dr. Victoria Carlsson, Woman's College, University of North Carolina

NAME	CHIEF FUNCTIONS	RESULTS OF DEFICIENCY OR ABSENCE	STORAGE	STABILITY	GOOD SOURCES	HUMAN REQUIREMENT*
VITAMIN A $C_{20}H_{30}O$ Exist as a B & Y carotene and cryptoxanthin in plants and animals. These provitamins are converted into Vitamin A in the body.	Essential for: Normal growth. Normal function of the eyes. Normal structure and function of epithelial tissues. Aids in increasing of body resistance to infections.	Drying and deterioration of epithelial tissue. (Keratinization.) Oil glands clogged, skin dry and rough with pimply eruption. Mucous membranes become dry, roughened, and offer a harbor for bacteria. Drying of tear glands, congestion of eyelids, degeneration of cornea. (Xerophthalmia). Night blindness (Nyctalopia). Retardation of growth. Inferior structure of teeth and early decay. Interference with reproduction and lactation.	Surplus stored in liver, lungs and kidneys.	Not affected by heat alone. Gradual loss through long continued heating in contact with air.	Fish liver oils, Liver, Butter, Cream, Whole milk, American cheese, Escarole, Chard, Spinach, Kale, Dandelion, Greens, Carrots, Broccoli, Asparagus, String beans, Yellow peaches, Tomatoes.	Exact daily requirement not known of any vitamin. Child 6000-8000 International Units. (1 U.) This may be supplied by milk, 1 quart. Cod liver oil, 2 teaspoons, butter, 2 teaspoons, 1 egg, 2 vegetables rich in Vitamin A. Pregnant and nursing women 5000 I. U. Adults 1,400-2000 International Units.
VITAMIN B₁ $C_{12}H_{14}N_4SO_6$ Thiamin.	Essential for: Growth and prevents neuritis. Promotes appetite and normal motility of the digestive tract. Important in carbohydrate metabolism, reproduction and lactation.	Beriberi. Enlargement, dilation and loss of tone of the heart.—Anemia. Polyneuritis. Reduction in carbohydrate metabolism. Edema. Disturbances of the gastro-intestinal tract.—Lack of appetite. Degenerative changes in testis and ovaries.	Not stored in the body.	Not destroyed at ordinary cooking temperatures.	Yeast, Liver, Wheat embryo, Milk, Yeast, Soy beans, Spinach, Lettuce, Broccoli, Parsnips, Tomatoes, Plums, Oranges.	(Child, 1,200 Sherman-Bourquin Units. This may be supplied by milk, 1 quart, grain cereal; tomato or orange juice.
RIBOFLAVIN $C_{17}H_{20}N_4O_6$	Essential for human health.	Lesions on the lips in the angles of the mouth (cheilosis). Stunts the growth of young. Lowering of general tone. Premature aging.	Stored in the liver, kidneys, lungs and heart.	Stable to heat.	Yeast, Milk, Liver, Egg, Leafy vegetables, Veal, Pancreas, Beef muscle.	Siebeling ('36) Child 450-540 Sherman-Bourquin Units. This may be supplied by milk, 1 quart, 1 egg, and leafy vegetables.
VITAMIN G (VITAMIN B ₂) or Goldberger's P-P factor of Nicotinic acid $C_6H_5NO_2$	Necessary for the prevention of human pellagra and black-tongue in dog.	Pellagra-like symptoms. Dermatitis. Sore tongue, mouth and lips. Gastro-intestinal disturbances. Disorders of the nervous system.	Stored in the body.	Stable to heat.	Yeast, Milk, Liver and extracts, Lean meats, Salmon, Tomatoes, Peanut meal.	Not determined.
VITAMIN C Ascorbic Acid or Cevitic Acid $C_6H_8O_6$	Prevents scurvy. Essential to formation and regulation of intercellular material.	Scurvy—sallow, muddy complexion, loss of energy. Low blood plasma level. Factor in calcium deposition in bones. Lenses of carbohydate metabolism. Slow healing of fractures and wounds. Inability of the tissues to produce intercellular material. Causes: Fragility and rupture of capillary walls. Anemia (more frequently in adults). Deformity, beading and fracture of growing bones. Striking alterations in tooth pulp and dentine—gums swollen, bleed easily and frequently ulcerate.	Not stored in the body.	Heating, drying and aging are factors in destroying it. Addition of alkalies increases destruction.	Citrus fruits, Tomatoes, Cabbage, Onions, Strawberries, Calf-her, Banana, Pine-apple, Potatoes.	Infants need 8-50 mg. daily. Adults need 28-100 mg. daily. Children need about four ounces (8 tablespoons) orange juice or tomato juice—60 mg. ascorbic acid. More is desirable.
VITAMIN D Two forms are important. Plant form. Activated ergosterol. Vitaminol. Animal Form. Activated 7-dehydrocholesterol.	Prevention and cure of rickets, spasmodophilia and osteomalacia.	Defect in calcification of growing bones. Bones become soft and fragile. Enlargement of rib junctions and ends of long bones. Malformation of chest and pelvis. Bowed legs. Bulging forehead. Delayed closing of fontanelles. Defects in teeth. General muscular weakness and instability of the nervous system.	Stored in the body.	Very stable.	Vitaminol, Cod liver oil, Halibut oil, Salmon, Sardines, Tuna fish, Irradiated food. Small amounts in milk and eggs.	League of Nations' 1936. Pregnant women 340 International Units daily. Infants, 3 weeks' old, ½ teaspoon cod liver oil or 400 I. U. per day; second month, 800 I. U. per day.
VITAMIN K Antihemorrhagic	Increases prothrombin in the blood and con-	Deficiency of prothrombin in plasma.		Fairly stable.	Leafy vegetables, Hog liver fat, Hempseed, Soy bean.	Not known.

MINERAL CHART—By Dr. Victoria Carlsson, Woman's College, University of North Carolina

MINERALS	CHIEF FUNCTIONS	RESULTS OF DEFICIENCY	FOODS WITH BIOLOGICALLY AVAILABLE MINERALS	REQUIREMENT
CALCIUM	Builds bones and teeth. Controls contractility of muscles. Preserves normal response of nervous tissue to stimuli. Aids in coagulation of blood. Coordinator among minerals.	Rickets. Weaker and deformed bones and teeth. Lowered vitality. Decreased length of life. Low calcium: phosphorus ratio. Anemia may result Impaired function of parathyroid glands.	Milk of all kinds, Cheese, Carrots, Kale, Whole grain cereals, Almonds.	Depends upon rate of growth—Children: 2-9 years -0.9 gm. per day. 9 years -1.0 gms. per day. 15-16 years -2 gms. per day. Adults 0.68 gm. per day. Pregnant and lactating women 1.5-3.0 gms. 1 qt. milk contains 1 gm.
PHOSPHORUS	Essential for: All active tissue. Cell multiplication. Cell maintenance. Proper liquid content of the tissues. Regulating neutrality of the blood. Oxidation of carbohydrates.	Rickets. Excess of phosphorus in the diet causes mild anemia. Impaired function of parathyroid glands.	Milk of all kinds, Cheese, Eggs, Meats, Fish, Vegetables, Nuts.	Children 1.2-1.4 gms. per day. Adults 0.88 gm. per day. Pregnant and lactating women 1.88-3.75 gms. per day.
IRON	Indispensable to: Cell structure and functioning. Stimulation of vital processes of the cells. In hemoglobin of the blood.	Anemia.	Available iron as per cent of total iron Carrot, raw 100 Potato 97 Carrot, cooked 98 Spinach 57 Cabbage, raw 72 Molasses (black) 100 Onion, raw 100 Beef liver 70	Children 11-15 mg. per day. Adult 12-15 mg. per day. Pregnant women 15-25 mg. per day.
COPPER	Essential in: Utilization of iron in hemoglobin formation. With iron prevents and cures anemia. Active in oxidation of ascorbic acid and in carbohydrate metabolism.	Inability to form hemoglobin	Calf and beef liver, Molasses, Wheat germ and bran, Nuts, Chocolate (bitter), Cocoa, Pork heart, Pork liver.	Children 0.8 mg. per day? Adult 2.0 mg. per day? Data insufficient.
IODINE	Essential for the proper functioning of the thyroid gland.	Enlargement of the thyroid gland (simple goiter). Cretinism in early childhood. Myxedema-reduced metabolic rate. -general physical and mental sluggishness.	Sea foods. Iodized salt. Foods grown in non-goitrous regions.	No precise information available. Children, adolescent, pregnant and lactating mothers need more than normal adults. Safe practice to use iodized salts and sea foods and other foods rich in iodine.

OTHER MINERALS	CHIEF FUNCTIONS
Sodium, Potassium, Chlorine, Sulphur, Manganese, Magnesium, Silicon, Fluorine, Selenium.	Influence contractility of muscles. Determine irritability of nerves. Chemical regulator of metabolism.

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Supplied by foods which supply other minerals.

Systematized Medicine

By WILLIAM H. SMITH, M. D.

Read Before a Conference of Social Agencies at Goldsboro

AMONG the many incoordinated things in our present way of living is the fact that for a long time there has been many people of the poorer class who have needed medical attention and have not received it, and that there has been an adequate number of physicians to give this care. This incoordination has been due to two factors, chiefly, one the hesitancy of the people to seek medical attention when they could not pay for it, and the other the inability of doctors to devote a large portion of their time to uncompensated practice. Doctors have always gladly treated the charity patients and in a great many instances thoroughly enjoyed it, but due to the fact that most physicians are solely dependent on their practice for a livelihood they have to devote a large percentage of their time to practice from which they will receive compensation. The care of the poor has been a concern of people from time immemorial, and in some of the European countries a systematized effort to help these people was made a good many years ago. Here in America, except for the County Homes, the State institutions for the treatment of mental and tubercular cases and for part charity hospitals, no systematized effort has been made until the passage of the Social Security Act of 1935 by the Federal Congress. As you know, the part that is in operation now is concerned with unemployment insurance and old age pensions, but the scope of this Act encompassed medical care for those who could not pay for it.

Following the passage of this Act, President Roosevelt in 1935 appointed a committee which was called the

Interdepartmental Committee, "To coordinate health and welfare activities in order that the full benefit of the varied Federal programs under the Act might reach with minimum delay and maximum effectiveness the individual man, woman and child for whose aid and service the program was brought into existence."

This Interdepartmental Committee held a conference in July 1938 to which representatives of organizations interested in health were invited. At this conference the committee made a report and also recommendations, which were presented to President Roosevelt. This report and recommendations were based on the findings of what is known as the Technical Committee on Medical care. This Technical Committee has made surveys and other investigations of the health and facilities for medical care, such as hospitals, etc., in the United States and has spent two years in conducting these investigations. Their recommendations concerned all phases of preventive medicine, as well as the care of the sick.

In the field of preventive medicine, their recommendations concerned venereal diseases, maternal and child welfare, prevention of tuberculosis and other phases of preventive medicine and public health.

Their recommendations for the care of the sick concerned increasing the number of hospitals in the United States, subsidizing hospitals, increasing the number of diagnostic centers and for the medical profession a most important thing, that physicians be paid for their work among those unable to pay for it. To pay for the care of the sick the committee recommended compulsory insurance.

Since this conference, which was held in 1938, there has appeared a great many articles in newspapers and magazines concerning these recommendations and particularly the attitude of organized medicine towards the proposed changes. While doctors are organized fairly well, it is chiefly for scientific purposes. The large majority of physicians are highly individualistic and are concerned solely with the care of their patients, hence do not take much interest in economic conditions or the social aspect of medicine.

For this reason the individual physician has left these things to the heads of the medical organizations and the individual should not be criticized for his lack of cooperation with the Government in working out plans for the care of the needy. The recommendations of the Interdepartmental Committee will probably be taken as a basis for laws to be passed by Congress and a study of these recommendations leads one to believe that treatment for the poor will be made more available.

When this program is set up, the poor will feel that they are entitled to medical care and will more frequently seek it, and on the other hand the medical profession will be paid for their services, although at a reduced rate, and for that reason will be able to give more time to the care of the poor without suffering so much financial loss. The early and adequate treatment of disease will probably mean increased hospitalization, as intelligent supervision by the Government will cause this class of people to be treated in the hospitals rather than in their homes. This statement is made because it is known that inadequate nursing care such as they would get in their homes and unavailability of special treatment would make home treatment unsatis-

factory and the best results could not be obtained. Another advantage of hospitalization would be the fact that physicians could more easily treat these patients in a hospital for the reason cited in the preceding sentence, and with the temperature, pulse and other data recorded in a hospital, less time would be necessary for each patient. This would enable the physician to look after these people with less time-consuming effort and with more success, which would bring satisfaction both to the physician and the patient.

The medical profession is not antagonistic to this program, especially after they study it for a while, as they will see they will be benefitted along with the community. They are antagonistic to a possible administration of these health activities by a bureau made up of politicians and administrators by politicians. That is the reason that the medical profession in America has been against what is usually termed socialized medicine. If a fair and just administration would carry out this program in a way it should be carried out, I am sure the medical profession will give its whole-hearted support and will work as hard and eager as anyone to make a success of it. The profession has been known for a great many years as being an altruistic body of men working solely for the interest of their patients, giving little heed to their own betterment and asking in return for their work only enough financial returns to maintain them and their family in livable conditions. The profession has also been known for years to push forward any measure that would make for better health of the individual and the community. If it were not for this fact the campaign for the eradication of typhoid fever, diphtheria and other communicable diseases would never

have succeeded. The public should be just as interested and just as eager to see that this program is administered in a way it should be administered, as the medical profession, because it is for the betterment of the public and if it is left to grasping, graft-seeking politicians,

the public is going to suffer more than the medical profession.

We plead with this body and all other organized bodies looking to the betterment of the community to work with the medical profession and see that this program is administered wisely and fairly.

The Sixteenth Decennial Census

Friendly Cooperation of the Public Desired

By the UNITED STATES CENSUS BUREAU

FACTS of vital interest and definite value to health authorities and the populace at large are now being gathered by the United States Bureau of the Census, in connection with the comprehensive Sixteenth Decennial Census of the United States. These facts, when gathered and tabulated, will cover virtually every phase of human life and activity, and particular attention is being paid in observing those indications of community health—housing conditions, domestic sanitation facilities, family income, occupations and the like.

The Sixteenth Decennial Census is really eleven different inquiries, each complete in itself and to be taken or already under way on a nationwide basis. Early in January, the Census of Business, the Census of Manufactures, and the Census of Mines and Quarries were begun. The Business and Manufactures enumerations are taking stock of every angle in production and distribution of drugs and medicines, hospital and surgical supplies and equipment, sickroom items, etc. Every drug store and commercial pharmacy in the country is being called on, as also are laboratories, supply houses and chemical plants, and so on.

Hospitals, since they are classed as professional institutions, are not be-

ing enumerated. But as the homes of nurses, doctors and other resident employees and staff members, they will be visited by Census of Population enumerators, beginning in April, and employees and permanent patients or inmates will be interviewed. Every individual in the country must be enumerated, either personally or through some responsible person.

Questions asked will concern age, nativity, family background, education, occupation, extent of employment in 1939, income, and so on. To define migration trends for the country as a whole, one question will ask "Where did you live five years ago?"

The Census of Housing, to be taken concurrently with the population count, is of particular interest to health officials since this survey will uncover, for the first time in American history, facts pertaining to homes throughout the Nation. Every dwelling will be surveyed, from the White House at Washington to the sheet-iron shacks down by the railroad yards and the dump. Typical of the questions to be asked are the following:

What is the size of this home? What is its value? Who owns it? What are the monthly bills? Does it have running water? Hand pump? Water supply less than 50 feet from

house? More than 50 feet? Flush toilet? Chemical toilet? Private, or shared with other households? Outside toilet? None at all? Bathtub? Refrigerator? Radio? How old is the dwelling? What is its condition? How many people live in it? How is it heated? What fuel is used for heating? What fuel is used for cooking?

Answers to these questions, tabulated and correlated with vital statistics and other pertinent figures for the same areas, will be tremendously valuable in analyzing the state of a community's health. In those cities where the Census Bureau cooperates with local committees in the study of Census tracts, these figures will be in connection with studies concerning the solutions to local prob-

lems of health, crime, relief, schools, etc.

Similarly, the Census of Agriculture, besides going thoroughly into the collection of facts on farming proper, will also unearth significant information on rural life and incomes. Sharecroppers, tenant farmers, as well as plantation owners, and so on, will all be called on for reports.

Accurate and complete answers to Census questions are required by Act of Congress. The same statute, however, prohibits the Census Bureau from revealing individual statements. Reports are seen only by sworn employees, and facts can be released only in broad statistical form. The use of Census declarations for purposes of taxation, regulation or investigation is prohibited.

Burns Kill One Hundred and Twenty North Carolina Children Annually*

By R. R. JONES, M. D., Durham

BURNS and scalds are too common. Last year forty people were admitted to Durham hospitals suffering from severe burns, and four Durham children died. Frequently, a severely burned child spends months in the hospital, and may need a year or more of hospital care to correct the deformities resulting from extensive burns.

The majority of burns are preventable, and prevention is the best treatment of this type of injury. Open fires and hot stoves should be protected by adequate screens. Children should not be allowed to play with matches, or in the kitchen while cooking is being done. Hot liquids should be placed well out of their reach, and since a certain number of mouth and gullet burns come from swallowing lye and acids, these poi-

sons should be kept where they cannot be tasted by inquisitive infants. Fireworks and cap pistols may cause dangerous powder burns. It is obvious that burning clothing should be extinguished promptly with water or by wrapping the child in a rug or coat.

If in spite of precautions a child is burned, the seriousness depends upon the size and depth of the burn. Relatively small burns in a child may prove more serious than a larger burn in an adult, and therefore a physician should be called at once and cod liver oil, olive oil, vaseline or a paste of baking soda mixed with water placed on the burn while waiting for the doctor to arrive. If the burn is extensive, all clothing should be removed and the child wrapped in a clean sheet and then in a warm

blanket. Chilling especially should be avoided. All severely burned children should be taken to a hospital as soon as possible.

Small burns should be treated by dressings of absorbent cotton or clean linen saturated with cod liver oil. Burns should be kept as clean as possible. Soot, cobwebs and dirty dressings should be avoided. Superficial burns seldom become seriously infected if simple precautions and clean dressings are used. If blisters are present, they may become infected and require a physician's care. Deep burns almost always are infected and should be treated in a hospital; recovery is possible if treatment is prompt and prolonged. Large areas of skin loss may be covered by skin grafts and deformities can be prevented by adequate care.

*From a series of articles published in the newspapers in Durham under the sponsorship of the local Medical Society.

OUTLAW THE FIRE-CRACKER

Many a fine boy in America has spent his last active Christmas. Some are in hospitals with serious injuries, some are maimed or blinded for life, others are in their graves.

The present young generation has many pleasures and recreations as compared with boys of former generations. And for this reason the present generation of kids should be willing to dispense with the fire-cracker, which is an intolerable nuisance, and a danger to life and property. Many a destructive conflagration results from these explosives in the hands of boys.

Forsyth and other counties, cities and towns have made it a misdemeanor to sell or shoot firecrackers. Many people—probably 90 per cent of Stokes—would be glad to see this vicious toy outlawed in this county.

It is useless and always a danger.
—*The Danbury Reporter.*

Public Health and Christian Sociology

SOMETIME ago a friend informed the Editor of a most interesting sermon she had heard from the Pastor, Rev. Donald H. Stewart, in the Presbyterian Church in Chapel Hill. The friend told us that it was so similar to the things we have been saying here for so long that she was sorry the Editor was not there listening. We immediately wrote to Mr. Stewart and requested a copy of his sermon with permission to publish it in the *Health Bulletin*. Instead of getting a copy of the sermon he sent us something that is better, that is, a condensed article which Mr. Louis Graves, Editor of the *Chapel Hill Weekly*, had requested Mr. Stewart to prepare, based on the investigations of Mr. Stewart which had caused him to prepare and deliver the sermon he did. Mr. Stewart very kindly

sent us a copy of the article published in the *Chapel Hill Weekly*, and we feel sure that Mr. Graves will not object to our giving the readers of the *Health Bulletin* the benefit of this excellent article, which we publish in full below.

We feel confident that our readers will readily understand that the conditions Mr. Stewart cites are not at all peculiar to Chapel Hill. In fact, many of us know of several villages and towns in North Carolina that have living conditions worse than those described in this article. We also know that some of the most sordid conditions due to a combination of such diseases as syphilis or tuberculosis with poverty are to be found in our rural sections. The purpose in preaching and writing about such ills is to stimulate our people to action which will eradicate them.

Responsibility for Bad Housing, Poverty and General Distress Rests With "Good" People of Community, Declares Mr. Stewart

When we were told of a sermon which Rev. Donald H. Stewart had delivered in the Presbyterian Church, about the distress among the poorer people of the Chapel Hill community, particularly Negro people, we asked him to write an article on the subject for the *Weekly*.

By Rev. Donald H. Stewart

The harm that "good" people do is more destructive than the openly unsocial acts of the avowedly "evil" man. This is due to the fact that the predatory acts of the "good" person are covert. Their submerged nature and the remoteness of their end results ensure them a long term of unobserved destruction. We are shocked when one man openly shoots down another, but one wonders whether we are as sensitive as we should be to the long-range murder which a privileged group imposes upon the victims of its prestige.

The "good" man, the respectable bourgeois, the "gentleman" is never in fact as gentle as he thinks he is. It is not an easy, and certainly not a comfortable thing to have to admit that we are the instruments of unrighteousness to a greater extent than we are apt to assume.

In the section of the local Negro community known as "Sunset," 60 per cent of which is within the town limits, even after the improvements which have been made in the last year are taken into account, the following condition exists:

Of the 72 houses, only 10 have water connections with spigots inside the house. Only 6 have baths; 56 have privies. Only 15 have commodes and water laid on inside house. Four have no privy.

In this area there are 5 or 6 open wells or springs which are pronounced unsanitary and from which many of these people must presumably get their drinking water. In one place one outside spigot serves for the water needs of the 8 homes in the immediate vicinity, not counting others which have recourse to it by reason of their lack. Hog pens, cow lots and chicken lots are often sus-

piciously near the open wells.

There are but 5 telephones in the entire Negro community, and 2 of these are in the Negro business district. When we add to this the fact that the only hydrant available for the "Sunset" district reposes in "civilized" isolation on Rosemary Street it is obvious that the fire hazard for these people is enormous.

The low-bracket money-level of the occupants causes little interest in the landlords and little ability in the occupants to keep many of the homes weather-proof, screened, etc. Only 10 per cent of the colored homes have adequate screens, 20 per cent have only part screens, while 70 per cent have none whatever. Only 5 per cent have proper garbage storage, while 95 per cent have no method of garbage disposal whatever.

In one house there live 10 persons in three rooms. There are the mother and three illegitimate children, and the grandmother, who is the only bread-winner for these five. She gets \$5 a week for half-time. In the same three rooms live another family, a man and his wife and three children, the last of which has just arrived. The mother of the first three is an open syphilitic and lies on a bed adjoining the new born infant. Cases of other kinds like this can be cited.

These are the lives in part (the half has not yet been told) of those who wash our clothes, tend our babies, mow our lawns, cook our meals, fire our furnaces, etc. They live on the rim of the world's life. Surely one cannot refrain from asking, just how gentle is the "gentleman" in a society where the half-stuffed and the half-starved thus live next door in the story of the modern Dives and Lazarus? In contrast to the "delightful" residential district of Chapel Hill there is another section where the dwellers awake to the grim dawn of the silhouetted and omnipresent privy; to behold, instead of lawns, a tousled and matted grass; instead of cement highways, the bare and often unkempt earth; to live their day from dawn 'til dusk with little to encourage and much to defeat them. Where beauty and order have arisen it is often the child of a decency and courage preserved sometimes amid heart-rending conditions, amid difficult conditions always.

Before we crawl into the time-honored refuge of the dishonest argument that shiftlessness and incapacity alone are the cause of this bleeding edge of human life, let us be honest enough to admit that we have first penalized poverty, and that there is more spoil of the poor in our house than we can comfortably account for upon the legitimate basis of animal lethargy in the dispossessed. The wasted land and the jaded people are in fact a check returned by the dispossessed upon the society of the possessor, and marked "insufficient funds," a condition of bankruptcy brought about largely by man's attempt to strike a bargain in human flesh and land.

That there is some awareness of responsibility is manifest in the splendid work of the Negro Community Centre just launched, let us hope to a wide and long service. The Crippled Children's work; the Handicraft program recently opened in the grammar school; the tuberculosis work of the Community Club, etc., are all to the good. However, they will need to be supplemented by something much more adequate than anything which the merely charitable gesture can suffice to accomplish.

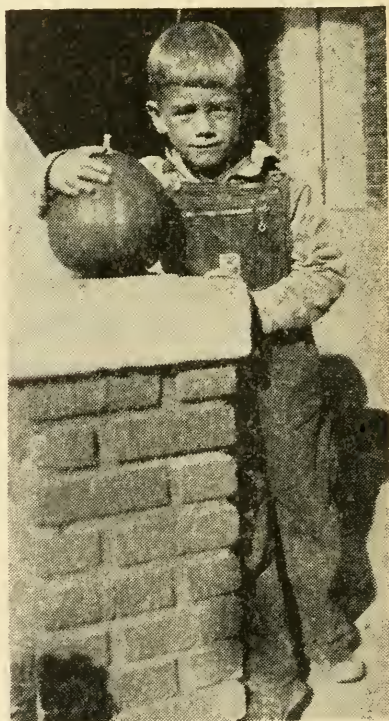
Perhaps our anaesthetized emotions can be aroused to something like honest dissatisfaction when we realize that in the county of Orange four Health Department workers are carrying nearly 1,500 cases in over 700 families. We ought to be shocked to know that the Welfare Department is attempting to do the impossible when it is given \$1,750 per year for general relief, and \$3,000 per year for hospitalization in a county of a population of 26,000.

Must we not start a housing project? Eventually, why not now? Could not the newly organized young women undertake the greatly needed "Baby Conference" (clinic)? Is not the inhabitant of Orange County able to do far more than he is now doing toward financing the tonsil removals and the eyeglasses for those school children who need them but cannot obtain them? Are there not many needed articles of clothing that might be made by the sewing groups and presented to the points of greatest need and maximum service under the guidance of the Health and Welfare

Departments? Is there not much educational work to be done?

The need is greater and deeper than any of us suppose. I am informed that checks and notices of gifts available may be sent to Mr. George Lawrence, the Director of Field Work in the School of Social Work. He may be reached at the Bynum Gymnasium.

Surely, an honest repentance and a disciplined renunciation must follow upon the certain knowledge that it is a killing and not a living that we have been out for. This is our desolation. In this family catastrophe none of us is guiltless.



CLYDE SHAVER

Miss McVeigh Hutchison, one of our staff nurses, sends in the above picture of Clyde Shaver, a Stanly County school boy who brought a pumpkin to school and sold it for money enough to buy himself a new toothbrush—proving that where there is a will there is usually a way.



The Health Bulletin

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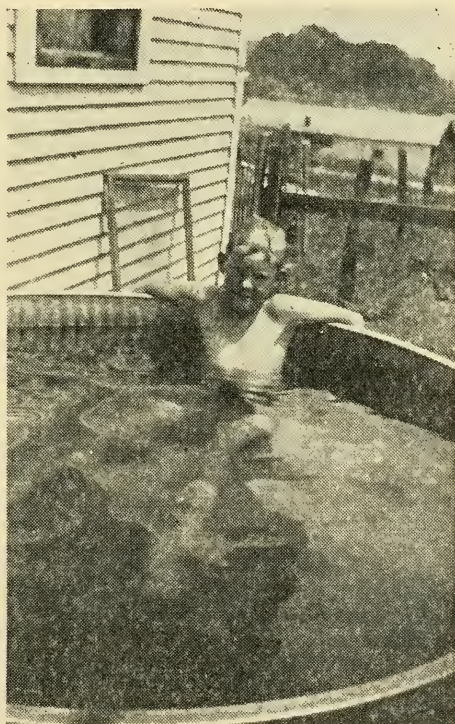
This Bulletin will be sent free to any citizen of the State upon request

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FIGHTING HIS WAY BACK TO HEALTH

The above is a picture of Jack Angel, son of Mr. and Mrs. Cecil Angel, of Burnsville, a "polio" victim, patiently carrying out the prescribed treatment in an effort to recover the use of his paralyzed muscles. The photograph illustrates the infinite care, patience and persistence necessary for the successful treatment of these children, and now being provided for hundreds of them in all sections of North Carolina. The expansion of this work was made possible four years ago through the allocation of Social Security funds by the United States Children's Bureau. The work is carried on by the State Board of Health and the State Orthopedic Hospital.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
 Appendicitis
 Cancer
 Constipation
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 Diphtheria
 Don't Spit Placards
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 Fly Placards

German Measles
 Health Education
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 Infantile Paralysis
 Influenza
 Malaria
 Measles
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 Residential Sewage
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Scarlet Fever
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 Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care
 Prenatal Letters (series of nine monthly letters)
 The Expectant Mother
 Breast Feeding
 Infant Care. The Prevention of Infantile Diarrhea.
 Table of Heights and Weights

Baby's Daily Time Cards: Under 5 months; 5 to 6 months; 7, 8, and 9 months; 10, 11, and 12 months; 1 year to 19 months; 19 months to 2 years.
 Diet List: 9 to 12 months; 12 to 15 months; 15 to 24 months; 2 to 3 years; 3 to 6 years.
 Instructions for North Carolina Midwives.

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Notes and Comment

By THE EDITOR

SOMEHOW it seems infinitely fitting that Easter should come early this year. Coming in this month, after the most severe winter in North Carolina and the South thus far experienced in this century, and a period of fear and anxiety for people everywhere, it is a welcome reminder of the sure foundation of spiritual things. Easter is a symbol of life. Throughout the State people have witnessed the destructive forces of Nature. Forces, cruel and hard to the poor among humans, and to the birds and all the creatures of the wild animal world in particular, as immortalized in the tales of Uncle Remus. The Christian world at least has been shocked every day throughout this terrible winter at the refinement of cruelty as practiced by the Godless Russians, the arrogant Germans and the Pagan Japanese, in their cowardly bombing of helpless women and children, living in peace in their defenceless cities and towns, with no way to defend themselves. Pestilence and disease as always in the wake of wanton and useless war has sent untold thousands to untimely graves.

In our own State the economic situation facing us through the destruction of certain crops and the curtailment of foreign markets is not pleasant. Those who suffer first and worst when jobs fail and crops are damaged and income falls, are the day-by-day workers and the tenant

farmers. North Carolina even in normal times is a State of low per family and per capita income, making the margin between income and life's actual, bare necessities perilously close at all times for thousands of families. When the margin is deferred even a little bit, disease spreads, nutritional deficiencies appear, a larger percentage of infants die, and the death rate from preventable diseases rises and the whole State suffers in every way.

In 1939, as a result of many factors, including years of careful and persistent work, the infant and maternal death rate in North Carolina reached the lowest mark ever recorded in all the State's history. It is earnestly hoped that the gains may be held, but the month of January was bad on the babies in thousands of homes all over the State, and February is always hard on the aged and the infants. But as the bright sunshine and lengthening days of the Easter season inspire renewed hope and courage for an afflicted world, let's all renew our efforts to make this year's public health record, even in the face of difficulties, a better one than last year.

* * * *

One of the grave needs of this State is more hospitals, an increased number of beds in those we have, available to the lower middle-class of self-respecting people, which comprise a large part of our population, at

a price they can afford to pay. In a modern community a hospital is as much a public necessity as a hotel, a filling station or telephone service. And before the people rally fully to the public support of hospitals, they must be built in their own communities and be of easy access to them. Just as the schoolhouse and the church, the hospital must become a part of the community. It goes without saying that another need is for a better distribution of medical care. Both of these necessities cost money. So does a graded school with a score of teachers, and so does an electric light plant. The people support those things because they believe in them. There should be an adequate modern hospital, with competent medical and surgical service, certainly in every county-seat town.

The State Board of Health, less than two years ago, insisted on one of the eastern counties that it join in the organization of a district health department, a serious need then and now, the cost to the county to be less than \$2,000 per year. The lawyer boss of the county, a potent member of the Legislature, would not even let the county board consider the proposal. "It cost too much—the county can't afford it."

Just the other day the newspapers carried an account of the completion of a fine new courthouse (lawyer's club) in that county, costing about \$100,000. The taxpayers can come in there and pay their taxes, the criminals can sit in the fine new chairs while being tried. But the diseases rampant in that county will not be treated there. Disease prevention will not be taught its people there, and it will not in any way ameliorate the misery of the sick and suffering among its citizens. A courthouse is a necessity, but so is a modern health department, hospital and medical ser-

vice. Half the interest the county will have to pay annually on its courthouse bonds for the next twenty or thirty years would support an adequate health department. The lawyer politician, however, cannot (or rather will not) see it that way.

The hospital insurance system will, if properly managed and organized, take care of maintenance of hospitals in every community.

This writer for one believes that there is sufficient ability, honesty, initiative and public spirit inherent in the medical profession of this State to provide adequate and competent medical and surgical service within the reach of every citizen of the State.

* * * *

Elsewhere in this issue we are quoting from a newspaper report of a discussion of the needs of the State in respect to hospital and medical service, by Dr. Wilburt C. Davison, Dean of Duke Medical School, at a meeting sometime ago. Dr. Davison is in a better position to discuss such a subject than any other member of the medical profession at this time. Since Dr. Davison issued his statement, public announcement has been made by Wake Forest College of plans for the establishment of a four-year medical school at Winston-Salem. This important move has been made possible by the family of the late Mr. Bowman Gray. The bequest is to be sufficient to erect the necessary buildings, with full equipment, and to provide sufficient endowment for partial maintenance. In connection with the medical school, the Baptists have already provided for doubling the capacity of their excellent hospital at that place. With the fine record of the Wake Forest Medical School already established through the years, the people of the entire State will be the beneficiaries.

We are publishing in another column

an article by Mr. O. M. Mull in a recent issue of the *Biblical Recorder* description of the New College plans. We also present an editorial by Mr. Sanford Martin in the *Winston-Salem Journal and Sentinel* on the same subject.

* * * *

In the meantime, interesting things are happening in our own particular sphere, and after all by far the most important feature of all these needs and activities under discussion—preventive medicine. One of the most encouraging items of this New Year is a report from Mrs. Wilbur H. Currie, of the Moore County Maternal Welfare Committee. Mrs. Currie reports that there has not been a maternal death in Moore County since August, 1938. The organization of work in that county for maternal and infant care and its execution is such an inspiring story that we hope and expect to present it exhaustively in an early issue of the *Health Bulletin*.

Another item which the Editor takes pleasure in passing along is a letter from a parent of a school child in Hillsboro. It is nothing new, but Dr. Branch, of the Oral Hygiene Division, loves to hear it just the same. And as the "old-timers" at least know the Editor, too, is proud of the record of school dentistry. Twenty-two years ago he succeeded in establishing a system of school dental health service after several years' study and planning. He stuck to the project day and night for eight long years, and with the help of such great men in the dental profession as Fleming, Squires, Everett, Jackson, Spurgeon, Wheeler, Betts, Hunt and many others, school dental health work was established in North Carolina on a sure and permanent foundation. For the past decade the work

has been under the direction of Dr. Branch, and every citizen of the State is now familiar with it.

The letter from the Hillsboro parent was accompanied with several photographs published in the *Durham Sun*. The letter follows:

"I am sending a clipping from the *Durham* paper, showing what your dentist sent to our town is doing for the health of our children. I consider this very valuable, especially so, since some of our schools sell too much candy.

"I'm so thankful that someone could recognize this, and show by the use of rats just what the proper diet means to a child.

"My little girl has gained some valuable knowledge from this."

"A PARENT."

* * * *

As the month of March is the one month in the year when more can and should be done than in any other month to prevent illness and death caused by pellagra, we take pleasure in presenting on another page in this issue an article by Dr. R. A. Herring, Director of the City Health Department of High Point, describing a clinical service instituted by his department in cooperation with the local Chapter of the American Red Cross. This clinical service was instituted by Dr. Herring and his associates last year and his article describes their experience in the work. So far as we know, this is the first instance of the kind in which such a service has been established in the State.

The pellagra clinic service described by Dr. Herring was instituted there on April 1st last year. So great was the response, indicating the need, that it was necessary for the first two and a half months to have two clinic sessions a week. After that, weekly sessions were scheduled until October 31st.

Dr. Herring was fortunate in hav-

ing an able and sympathetic assistant in the person of Dr. Frederick R. Taylor, recognized throughout this section of the South as one of the most competent authorities on the subject of pellagra. Dr. Taylor is a man who has a sympathetic attitude toward all the problems of public health. While he is making a living practicing medicine, he has always been willing to contribute of his time to the limit of his capacity in any required public service which would advance the interest of the poor people in his section and of the health department work.

We hope that all of the health officers in the State will read this article of Dr. Herring's with particular interest, and there is not a doubt but what a similar service could be easily organized in several of the other larger towns in the State. Such a service should be organized and put into effect on or soon after the first of April if it is to be of much value to the sufferers from pellagra this spring and summer.

We are greatly indebted to Dr. Herring for his excellent article, as well as for his initiative in establishing the service in High Point.

State Health Officer Makes Progress Report for 1939

By CARL V. REYNOLDS, M. D., State Health Officer

LAST year witnessed gains on several important fronts in the battle against disease in North Carolina.

Information that is both interesting and encouraging is found in the 1939 provisional report of the State Board of Health's Division of Vital Statistics, of which Dr. R. T. Stimpson is the Director. On the other hand, certain weaknesses also are revealed. Any report that simply gives figures, uninterpreted, carries little weight and is soon forgotten.

We must bear in mind that a year's compilation is merely factual; that it can, at best, reflect only a "trend," encouraging or discouraging, as the case may be. To get the true picture, we must follow the "trend" through a series of years.

Vital statistics figures in North Carolina for last year, which have just been compiled, do, in some instances, reflect a very decided and encouraging "trend." The 80,421 births reported during the year outnumbered the 31,928 deaths that oc-

curred during the same period by 48,493, and there were 1,636 fewer deaths than were reported the previous year, bringing the rate down from 9.5 to 9.0 from 1938 to 1939. If the 1938 rate had remained unchanged in 1939, the total number of deaths would have been 33,839, instead of 31,928, which means that, on this basis, the number of lives saved was, in reality, 1,911, instead of 1,636. Please bear in mind and recall in your future reading that an increase or reduction of one point represents the saving or loss of 3,500 lives within a year.

Pneumonia—Brighter Picture

Pneumonia has continued through the years to be one of the greatest scourges that has harrassed humanity. Men and women, physician and the laity, have bowed helplessly before its inexorable law of death. But a new day appears to be at hand in the battle against this arch-enemy.

While a single year's figures cannot be taken as final as they apply

to pneumonia any more than in their application to any other disease, yet we have here a very striking example of an encouraging "trend."

In North Carolina last year we saved the lives of 537 more pneumonia patients from untimely graves than we did the previous year, the total number of deaths from this cause in 1939 having been 2,172, as compared with 2,709 in 1938, the rate dropping from 76.8 to 61.0.

To emphasize the downward "trend" in deaths from pneumonia in North Carolina, it is pointed out that there was also a decline from 1937 to 1938, when the number dropped from 2,945 to 2,709, and the rate from 84.3 to 76.8. In other words, the rate dropped 2.33 points in two years and the number of pneumonia deaths 773.

Reasons for Decline

We feel that this saving of life has been due to two major causes: The early typing of the disease for the administration of pneumonia serum and sulfapyridine, which has shown results nothing short of marvelous.

Technicians for typing pneumonia may now be found at strategic points throughout the State, due to the courses in training which began at Duke University in January, 1938, through the cooperation of the Medical School of that institution and the North Carolina State Board of Health, stimulated by the active support of the North Carolina Commission on Pneumonia Control, of which Dr. Hubert B. Haywood, of Raleigh, also a member of the State Board of Health, is chairman. There were 67 technicians trained during the first course at Duke, in addition to those who had previously qualified and pioneered in this great work in our State.

I wish to emphasize here the value of Dr. Haywood's interest in this matter, as he devoted much time to

laying the groundwork for what has proved to be such a successful undertaking.

While the use of sulfapyridine has wrought revolutionary changes in the pneumonia situation and has brought hope to the victims of a disease which, as late as 1937, took a toll of 110,000 lives in the United States, the importance of early diagnosis remains paramount. Neither serum nor sulfapyridine can be expected to overcome the serious handicap that delay brings.

I cannot leave this subject without sounding a warning against neglecting what so many people erroneously term the "common cold" or a "touch of flu." Every "common cold" or "touch of flu" should be treated seriously until it proves itself otherwise, and we should constantly bear in mind that the "common cold" and "touch of flu" furnish a fertile field for the complication—pneumonia, which remains a serious menace to life and health.

Saving Babies, Mothers

One of the most gratifying features of the 1939 report lies in the fact that it reflects a "trend" which has now become very definite in North Carolina—a sharp reduction in both infant and maternal mortality.

Last year the lives of 757 babies under a year old were saved, the total number of deaths in this group having been 4,704, as compared with 5,461 in 1938. During a single year North Carolina's infant mortality rate dropped from 68.3 to 58.5 per 1,000 live births. The United States as a whole had an infant mortality rate of 54.4 in 1937, the last year for which figures are available, and it is interesting to note that the White infant death rate for the entire country that year was 50 and the Negro rate 82. The White rate for North Carolina was 56, the Negro

rate 85 and the total rate 64.9. The average Negro population in the United States is 10 per cent, as compared with 29 per cent in North Carolina. This gives added importance to our local figures.

Maternal deaths per 1,000 live births in North Carolina dropped from 450 in 1938 to 383 in 1939, bringing the rate down from 5.6 to 4.8 in a single year. In 1935 the maternal death rate in North Carolina was 7.0. So, there was a drop of 2.2 points in four years. The United States rate in 1937 was 4.9. This means we are making progress. Stated in simple terms, North Carolina last year saved 67 mothers and had 518 more live births than during the preceding year.

These figures are encouraging to public health workers, because they show that beneficial results have accrued from the work that is being done in infant and maternal clinics and from the other efforts that are being exerted to save the State's mothers and babies.

Last year saw the saving of 357 lives of children under two years of age in North Carolina from death from diarrhea and enteritis, the rate falling from 29.2 to 18.9 between 1938 and 1939.

Preventable Diseases

Now, let's take a look at another aspect of the vital statistics picture in North Carolina, as painted by figures for 1939. We will consider a few of the preventable diseases and see what we have done in this field. Typhoid deaths in 1938 numbered 72, or a rate of 2.0, as compared with 46 and a rate of 1.3 in 1939. This reflected an actual saving, not considering the increased population of 26 lives. Typhoid is a preventable disease and we have gone a long way toward its elimination, but the means of combating it have only to be abated, even temporarily, for it to

flare up and become the menace it formerly was.

I want to call particular attention to deaths from undulant fever. There were 6 last year, with a rate of 0.2, as compared with 2 in 1938, with a rate of 0.06. Only recently, I read with interest a newspaper article that had its origin with our State Department of Agriculture calling attention to the problem presented by Bang's disease—or infectious abortion in cattle, which is a source of undulant fever, and discussing ways and means for its elimination. Here we have both an agricultural and a health problem, and I am glad to note that there is a serious effort being made to eradicate Bang's disease and, thereby, lessen the "trend" toward a greater incidence of undulant fever. In this connection I wish to call the particular attention of hog and goat breeders to the importance of inoculating these animals against infectious abortion as a further aid in the prevention of the spread of the undulant fever scourge.

There is at least one State in the Union where undulant fever is as great a hazard as typhoid.

The Diphtheria "Disgrace"

Diphtheria, in spite of the fact that it is preventable, continues to take its toll among our young. There were 173 deaths from this disease in 1939, with a rate of 4.9, as compared with 176 deaths and a rate of 5.0 in 1938, the decrease in both the number of cases and the rate having been negligible. It is nothing short of a disgrace that we should have so many deaths from this disease. Urgent appeals have gone forward for the enforcement of the law which provides that all babies shall be immunized against this disease between the ages of six months and twelve months and which provides that no child shall be admitted to any public,

private or parochial school who has not been immunized.

The results of this law should have been apparent before now, as it was ratified last March. While there may be no evidence of enforcement up to the present time, this law must be complied with!

We are proud of the continuous progress we have made in our war on tuberculosis in all forms. Last year there were in North Carolina 1,657 deaths from pulmonary tuberculosis, with a rate of 46.5, as compared with 1,968 deaths and a rate of 48.1 in 1938—a decrease of 41 deaths and 1.6 in the rate. Other forms of tuberculosis claimed 149 victims, as compared with 155 the previous year, a drop of 6, while the rate fell from 4.4 to 4.2.

When I sum up the gains that have been made in our fight against typhoid fever, infant and maternal mortality, pneumonia, tuberculosis and other diseases which we can either prevent or successfully treat and note the comparatively slow progress that has been made against diphtheria, a preventable disease beyond question, I feel like crying out: "Mothers, beware!" or, perhaps, "Forgive them, for they know not what they do in practicing such neglect!"

A Challenge

The number of people who die violent deaths in North Carolina each year presents a distinct challenge.

While many of these do not fall into the category of public health problems, strictly speaking, they do have a very decided bearing on public safety. We hear a lot about "safety," but, alas, like the weather, there sometimes seems to be little we can do about it. In many cases, these violent deaths are preventable. Think it over.

Last year there were in North Carolina 1,494 deaths from what are styled "preventable accidents," as compared with 1,444 the preceding year, a gain of 50. These included: Automobile accidents, primary, as reported to the State Board of Health, 899; automobile and railroad collisions, 28; other railroad accidents, 93; air transportation accidents, 7; accidental drownings, 154; conflagration and accidental burns, 246; accidental traumatism by firearms, 67. There was a marked increase in drownings, 50 more having been reported than occurred in 1938, the majority occurring, of course, in the summer months during the extremely hot weather.

There was a decrease of 57 in the number of suicides and an increase of 3 in homicides.

In presenting these figures, I have undertaken to do more than to present so many "statistics"; I have tried to give the people something to think about and hope that I have succeeded.

High Point Establishes Clinic Service for the Prevention and Treatment of Pellagra

By R. A. HERRING, M. D., City Health Officer

WITH the recent isolation and identification of nicotinic acid as the pellagara-preventive factor of the vitamin B complex, renewed interest has been shown in the field of

prevention and treatment of pellagra throughout the endemic area of this disease. The literature in this relationship has been voluminous during the past two years, the result of

investigations by the recognized authorities on pellagra. At the present time this drug occupies the status of a specific in treatment, since it has shown the ability to bring about immediate clearing of the acute symptoms.

When applied in a public health program, this drug should therefore be the means of quickly rehabilitating clinically a large group of persons of low economic status, who, on account of the incidental dietary deficiency, have had the disease develop and are unable to receive the medical and other attention necessary to relieve them. Such groups occur in all urban and rural areas of the South and may properly be included among the clientele of the preventive clinical services of the public health department of this area.

The following is a brief review of the experience of such a clinical service now being carried on in the High Point City Health Department. This activity, constituting as it does a distinct preventive feature of the present health department program, is said to be the first to be established in the State. The review is offered in the hope that additional similar services may be established in other health departments, since unquestionably there exist large numbers of pellagrins in close proximity to most of the city and county health departments of the State, many of whom, by reason of their low economic status, could properly come within the benefits of such a service.

The activity was developed in this health department in cooperation with the local Chapter of the American Red Cross. This organization, it may be recalled, entered the pellagra field a few years ago as a relief activity and now renders aid to pellagra cases at a number of points in the South. The local Chapter took up this problem in 1935, furnishing yeast and garden-

seed to indigent cases and early in 1937 had listed over three hundred cases to whom it had furnished or was furnishing assistance.

Upon organization of the present full-time public health program in High Point early in 1937, the pellagra field became a field of mutual interest to the Red Cross Chapter and the City Health Department, and since that year the two organizations have given it cooperative attention. Early in the period since then the present Director of Health indicated to the Red Cross Chapter that the principal deficiency in the Red Cross pellagra program locally was a lack of clinical supervision of the cases to which the Chapter was giving assistance, since it theretofore had had no means of screening their relief cases to eliminate the non-pellagrins and of checking the results of the preventive work clinically in the individual cases. A pellagra clinic was suggested as the means of overcoming this deficiency. The clinical service was organized during the current year and began operating on April 1, 1939. During the first two and a half months of operation, due to the heavy patient load during its early stages, clinic sessions were held twice weekly; thereafter weekly sessions were scheduled and continued until October 31st, the period of seven months of operation being the period of the year of acute symptoms in clinical cases.

The clinic was located in the City Health Department, where adequate facilities for clinical study and physical examinations of patients are available. The department provided a nurse for the clinic sessions, laboratory service, record forms, files and other needs of the clinic. The Red Cross Chapter provided a nominal fee for payment of the clinician, a social worker for case-finding and

follow-up and, in some instances, transportation of patients to and from the clinic and supplied the nicotinic acid and yeast necessary in treatment of cases. Clinic sessions began at 8:30 A. M. and at times, due to heavy load, extended to 12:00 noon on Tuesday of each week. Dr. Frederick R. Taylor, an outstanding authority on this disease, who recently contributed his second revision of Dr. Edward Jenner Wood's chapter on pellagra in *Oxford Medicine*, served as clinician. Clinic sessions had an average of about fifteen patients at each period. A total of 157 persons, who made 450 visits to the clinic, were received for examination during the seven months of operation. Of these 109 were classified definitely as pellagrins, past or present, and 48 as non-pellagrins. These comparative numbers indicate particularly the advantage of such a clinical service in a preventive pellagra program, since a large amount of time and costs will be expended in the form of social service and drugs upon this latter group if not screened out by careful clinical examination. It was, in part, just this wasted effort that prompted the suggestion that a clinic service be developed to eliminate it by proper classification of cases.

Since closure of the clinic for this season the records of the group of positive pellagra cases have been subjected to detailed and critical study by the clinician, Dr. Taylor. An illuminating mass of epidemiologic and clinical data has been extracted and analyzed and it is regretted that space is not available for presentation of the complete study. The purpose of the service, however, being primarily rehabilitation of cases, reference can be made only to the results of the treatment applied. In this nicotinic acid, yeast and diet were used. As to therapeutic results

the clinician in his study of the records of cases states: "All patients who took treatment faithfully showed prompt improvement on either nicotinic acid or yeast, so far as their pellagrous symptoms went. Eighty-one cases were given nicotinic acid, twenty-four were given yeast alone, five were given diet only and one patient was given hydrochloric acid. In general, the treatment given seemed adequate insofar as the pellagra *per se* went."

All patients were given information as to the dietary requirements in further combatting the disease by the clinician and the social service worker gave instructions in the economics of food purchase and preparation in the home. While some gain in weight was noted in those under treatment, this was not as great as would be desired. This is accounted for, in all probability, in the low income of patients, which prevented them from obtaining a diet adequate to produce satisfactory weight gains. This finding reveals a deficiency still existent in the control plan, which it is necessary to meet if the plan is to be ultimately successful. Inevitably, the service will contain a recurring group of cases from year to year unless means of providing an adequate diet throughout the year for these cases can be found. With the treatment at hand, prompt relief of the acute symptoms, which appear in the spring and early summer months, can be brought about; yet, if these patients go through the winter on continuing deficient diets, the seasonal expression of the disease may be expected to recur. While it is planned to continue the clinic from year to year as organized, it is hoped to secure additional funds to supplement the diets of cases, so that this seasonal recurrence of the disease may be prevented.

South's Medical Needs Are Cited

Dearth of Hospital Facilities Given As One Reason

By WILBURT C. DAVISON, M. D., Dean of Duke Medical School

SPEAKING before the assembly of the first Southern Institute for Hospital Administrators, in session at Duke University, Dean W. C. Davison, of the Duke School of Medicine, said that the South, in order to have adequate medical service, needs nearly twice the present number of physicians and a three-fold increase in hospital beds, especially in the rural areas.

The solution, he said, is three-fold: Improving Southern medical schools, expanding Southern hospitals, and making possible the education of Southern country youths. The first, he pointed out, is being done rapidly by the cooperative efforts of the universities and the foundations, the second can be accomplished by voluntary hospital care associations, and the third requires the establishment of rural student area loan funds.

Dean Davison showed that ten Southern States have one physician for each 1,063 persons; while in four representative Northern urban States there is a physician for each 719 persons.

He also said that in the South there is one hospital bed for each 1,472 persons, while in the same representative Northern urban States there is a hospital bed for each 419 persons. In North Carolina there is a hospital bed for each 999 persons, and a physician for each 2,284 persons.

Dr. Davison cited factors which affect the distribution of physicians and hospitals in the South. "The distribution of physicians and that of hospitals are mutually dependent," he stated, "the former rarely will practice and remain in a community without the latter, and a hospital without adequate medical personnel is not a hospital but a somewhat dangerous hotel."

The following nine factors apparently affect their distribution in the South, he said:

(1) The financial returns of practice in the Northern cities are, or were, better than in rural Southern counties.

(2) Living and social conditions are not as attractive in the country.

(3) The distances between widely scattered patients and poor roads.

(4) The type of instruction in medical schools.

(5) Southern hospital facilities often are inadequate for modern medicine.

(6) Because of the closing of many Southern medical schools, numbers of Southern students, who must now attend medical schools in the North, remain there.

(7) The relatively small number of medical students from rural areas.

(8) The necessity for the education of the public in the recognition of and the need for good doctors and hospitals.

(9) The ability of the physicians or surgeons in the area.—*Washington News*.

PERSONAL NOTES

Dr. Ralph J. Sykes, former health officer for Halifax County, has been named to succeed Dr. George M. Leiby, Venereal Disease Consultant in the Division of Epidemiology.

Dr. John A. Anderson, who has held the position of health officer in Craven and Cabarrus Counties and also important positions in other States, including Louisiana, has joined the staff of the Division of County Health Work as consultant in public health administration.

Dr. E. S. Lupton, who has recently completed an internship in Pediatrics at Duke, has been appointed Assistant Pediatric Consultant in the Division of Preventive Medicine. Dr. Lupton will assist in the field work in the maternity and infancy centers as his first assignment.

Miss Josephine Daniel, who has been one of the two district consultant nurses with the Division of County Health Work for the past four years, resigned December 31st to accept work with the Oklahoma State Board of Health. Miss Daniel's place will be filled by Miss Amy Louise Fisher, who comes to the Board from the Durham Health Department.

Baptist Hospital and Wake Forest Medical School Co-ordinated for Service

By O. M. MULL

AS IS now generally known, the Bowman Gray Estate has made a large donation to Wake Forest College with which to establish a medical school on the grounds of, and in cooperation with, our Baptist Hospital in Winston-Salem. This gift is the largest single donation that was ever made to a Baptist institution in North Carolina by any citizen of our State. The proposed medical school and our hospital working together will create a great medical center at Winston-Salem that will take the same high rank in medicine that Wake Forest College takes in education. They will provide laboratories and equipment for research and study that will cost as much as the total cost of the average local hospital.

Our hospital will continue, as at present, to belong to the Baptists of North Carolina, and the medical school will be an integral part of Wake Forest College. The facilities of the two will be co-ordinated. They will both be working in unison on the same job.

Hospital and medical school thus working together will render a double service. The same efforts that minister to the sick and diseased will also teach and train doctors. The medical school will graduate about fifty doctors annually, who will locate in every city, town and rural section of North Carolina.

One hundred and six years ago the Baptists of North Carolina established a school of religion at Wake Forest College. This school has trained thousands of consecrated preachers whose labors have greatly blessed mankind. We likewise established schools of education at Wake Forest and our other colleges that have trained thousands of school teachers who have turned on the light of learning throughout the State. Nearly a half-century ago we established a School of law at Wake Forest College and have trained more than a thousand lawyers, many of whom

have become distinguished and have served with honor in every branch of our Government. It has been left until this late date for us to establish a medical school to train doctors. In the future we shall serve the people of our State in these four major fields—religion, education, law and medicine.

I am sure that every missionary-minded Baptist in North Carolina will rejoice that we are to have a great medical school where medical missionaries can be educated. At present it is financially impracticable to furnish medical missionaries. I am told that the cost of medical schooling, at present, is from \$1,000 to \$2,000 a year. The average student who graduates from a medical school has either impoverished his parents or mortgaged his own future. More often he has done both. A medical graduate with a \$5,000 mortgage on his future cannot pay off by entering the mission field. We must make it financially possible to train medical missionaries at our school of medicine.

Finally, preaching the Gospel and ministering to the sick are about the only two services that are exclusively supported by the benevolent spirit of Christian people. By its widely expanded and helpful social legislation our Government is now using tax money to supply or supplement the income of the widow, the orphan, the blind, the jobless, and many others who formerly depended exclusively upon public charity. I hope that the time will never come in America when tax money will be used to pay our preachers, and likewise I trust that the benevolent spirit of our Christian people will always so amply care for the sick that tax money will never be needed. Thus may the contributions of our Christian people be sufficient to comply fully and effectively with the dual instructions of our Master, that we preach the Gospel and heal the sick.
—*Biblical Recorder.*

OCCUPATIONAL DISEASE HAZARDS DISCUSSED AT THE ANNUAL MEETING OF THE AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS

North Carolina's Division of Industrial Hygiene participated in the Seventieth Annual Meeting of the American Institute of Mining and Metallurgical Engineers, held in New York City, in February, when M. F. Trice, Industrial Hygienist for the Division, presented before the Health and Safety Section a paper entitled "Pyrophyllite Dust: Its Effect and Control."

In this paper the properties, composition, sources and utilization of pyrophyllite are outlined and the present methods of mining indicated. Reviewed are the results of a study of mining and milling operations to determine the effects of exposure to pyrophyllite dust, which study involved 96 present and 5 former pyrophyllite workers, all of whom were

given clinical and X-ray examinations. Among the 42 workers exposed for more than 2 years, 15 (or 35 per cent) exhibited evidence of lung pathology attributable to dust. The disease produced is characterized clinically by dyspnea, or shortness of breath, usually associated with a cough and weakness. In an X-ray film of the chest the disease appears "as massive tumor-like shadows bilaterally situated in the subapical regions or as granular densities throughout the lungs." Some of the more seriously affected had been exposed to the dust for as little as 6 years. It is emphasized that the effective control of dust underground has resulted from the adoption of wet methods and improved general ventilation; whereas, on the surface tight housings for machinery and exhaust ventilation have eliminated hazardous concentrations of dust.

A New Advance on the Health Front

By SANTFORD MARTIN, Editor

ALL who know anything of the history of the long fight against disease and human suffering in North Carolina will see a great deal more in the news from Wake Forest than the announcement that Winston-Salem is to have a new Medical School.

That is big news, it is true, particularly for Winston-Salem. It is news our people long have been hoping to hear—that Wake Forest College, with one of the foremost two-year medical schools in the South, is to cooperate with the North Carolina Baptist Hospital and other hospitals here in an enterprise that will result in making this city an outstanding medical center of the State.

It is impossible to estimate the value of such an institution to the social, cultural and economic life of our community in the years to come. For this Medical School is destined to grow as the city and State grow

and to become increasingly serviceable to humanity.

But it will be far more than a Winston-Salem enterprise. It will be a valuable asset to the whole State, because it will give the State another four-year Medical School in which North Carolina doctors can be prepared for work in North Carolina without, of necessity, going out of the State to complete their training.

This Medical School is destined to become a mighty new force in the fight to make North Carolina a safer and better Commonwealth in which to live, by helping to provide more adequate hospital facilities and medical care for all of our people.

In his announcement that Wake Forest College Medical School is to be transferred to Winston-Salem, Dr. Thurman D. Kitchin, President of the College, says it will train around 160 to 200 doctors through a full four-year course. That will assure

40 or 50 to a class, against only about 30 who are permitted to enroll in a class under the present two-year set-up at the College.

What this will mean to North Carolina in the years ahead can be the better appreciated when we know that at present, as Dr. Kitchin points out, "North Carolina needs 80 new doctors a year to replace those who die or move away from the State, not taking into consideration the increase in population."

But it will mean more than new doctors. It will result in improved hospital facilities for our people. Wherever medical schools have been established in connection with hospitals such improvement invariably has followed.

The people of Winston-Salem will be justly proud to learn, we are sure, that such a new advance in the cause of health in this State has been made possible by public-spirited citizens of this city.

The late Bowman Gray was a modest and quiet man. He did not seek the limelight. In fact, he shunned it. But his name inevitably appears in the headlines today because of his deep concern for suffering humanity, as manifested when he came to write his will.

He was particularly interested in the hospitals and the sick of his own community. And for that reason the committee, composed of Mrs. Nathalie Bernard, James A. Gray, Bowman Gray and Gordon Gray, who were charged with the responsibility of deciding just how the fund he left for benevolent purposes should be distributed, have donated all its present and any future resources to this noble enterprise, which promises to prove a perennial blessing, not only

to the afflicted of Winston-Salem, but also to people in need of medical treatment throughout North Carolina.

We are sure we speak for multiplied thousands of people in Winston-Salem and all North Carolina when we congratulate the committee on the wisdom of its decision.

In the long history of Wake Forest College, covering more than one hundred years, that institution never has taken a step which meant more for its expanding program of service to humanity than the acceptance of this donation will mean.

For the transfer of this Medical School to Winston-Salem not only assures that in the future the College will be able to offer a four-year course in medicine to its students; but it also assures close cooperation between the College and the Baptist Hospital here in a new program of progress for both of these splendid institutions.—*Journal and Sentinel*, Winston-Salem, N. C.



The North Carolina League is again sponsoring a sale of Easter Seals to assist in furnishing X-rays, braces, special diets and other services for crippled children. Your cooperation is needed.

Appendicitis Deaths Are Preventable*

Purgatives and Delay in Seeking Medical Attention Keep the Appendicitis Death Rate High

By C. E. GARDNER, M. D., Durham

APPENDICITIS kills 20,000 Americans each year. Practically all of these deaths could be avoided if people who have a "bellyache" would see a doctor as early as possible, and not take purgatives.

Delay in seeking medical attention during the early stages of an attack is the most important single factor which maintains the death rate in appendicitis. The danger in this disease comes when the appendix rup-

tures and peritonitis develops. For a number of hours after an attack of appendicitis begins, the infection is entirely confined within the appendix. Removal of the appendix at this stage, before rupture occurs, is a safe procedure which promptly cures the disease. On the other hand, if through indifference or carelessness, medical attention is not sought until the appendix ruptures and peritonitis begins, the situation becomes extremely dangerous. It is in this group that almost all of the deaths from appendicitis occur.

Self-administration of cathartics and laxatives during an attack of abdominal pain is almost as dangerous as neglecting to call a physician. Medical authorities have proved that cathartics when taken during an attack of acute appendicitis hasten rupture of the appendix. The death rate among individuals who have taken cathartics during an attack of appendicitis was found to be more than twice that of those who had not taken any.

Appendicitis is a treacherous disease. It does not cause the same symptoms in every individual. Once an attack begins, the appendix may rupture within a few hours, or may never rupture.

The only reliable symptom at the onset of appendicitis is abdominal pain. It may be any place in the abdomen and it is usually not very severe. Of course, many other conditions cause abdominal pain. However, if the pain has not disappeared entirely within one or two hours, it may very well indicate the beginning of an attack of appendicitis. Such symptoms necessitate prompt medical attention.

Indifference to and ignorance of the possible dangers of abdominal pain, delay in seeking medical attention once abdominal pain begins,

and purgation for a "stomach-ache" are the factors which account for the deaths in appendicitis. These deaths can be prevented if the following rules are followed:

1. See your doctor promptly if you suffer from abdominal pain that does not disappear within a few hours.
2. Do not take cathartics during an attack of abdominal pain.
3. Do not pass off an attack by saying you have had similar attacks in the past without any harm being done; the present attack may be the real thing.
4. Follow your doctor's advice.

*From a series of articles published in the newspapers of Durham under the sponsorship of the local Medical Society.

NATIONAL NEGRO HEALTH WEEK

For many years the United States Public Health Service has been promoting an annual special Negro health week. This year the date falls on March 31st to April 7th, inclusive. That is the date recommended for the purpose of concentrating activities in this field by people who want to put on special programs for the occasion. Naturally, the period is variable and there might be other times more suitable to various communities.

So far as the North Carolina State Board of Health is concerned, it has urged upon the citizens of this State an annual year-round program, placing efforts on seasonable activities when practical, but never relaxing in the urge for health protection every day in the year. The method of placing special emphasis on certain subjects at selected periods has its advantages, of course. Wherever such methods may be carried out with special emphasis, such communities may be assured of the cooperation and support of the State Board of Health.

LABORATORY NUMBER



The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

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APRIL, 1940

No. 4



NEW CENTRAL BUILDING STATE LABORATORY OF HYGIENE

The above is a picture of the New Laboratory building, located on Caswell Square, in Raleigh. By Legislative Act, the building is to be forever known as the "Clarence A. Shore Laboratory," as a memorial to its founder and for twenty-five years its Director.

The building was dedicated with impressive exercises on February 21, 1940. This splendid plant, together with the farm division, all under the direction of Dr. John H. Hamilton, Director of the Division of Laboratories of the State Board of Health, is expected to be one of the chief pillars in the public health system of North Carolina.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
 Appendicitis
 Cancer
 Constipation
 Chickenpox
 Diabetes
 Diphtheria
 Don't Spit Placards
 Eyes
 Flies
 Fly Placards

German Measles
 Health Education
 Hookworm Disease
 Infantile Paralysis
 Influenza
 Malaria
 Measles
 Pellagra
 Residential Sewage
 Disposal Plants
 Sanitary Privies

Scarlet Fever
 Smallpox
 Teeth
 Tuberculosis
 Tuberculosis Placards
 Typhoid Fever
 Typhoid Placards
 Venereal Diseases
 Vitamins
 Water Supplies
 Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care
 Prenatal Letters (series of nine monthly letters)
 The Expectant Mother
 Breast Feeding
 Infant Care. The Prevention of Infantile Diarrhea.
 Table of Heights and Weights

Baby's Daily Time Cards: Under 5 months;
 5 to 6 months; 7, 8, and 9 months; 10,
 11, and 12 months; 1 year to 19 months;
 19 months to 2 years.
 Diet List: 9 to 12 months; 12 to 15 months;
 15 to 24 months; 2 to 3 years; 3 to
 6 years.
 Instructions for North Carolina Midwives.

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THE Health Bulletin

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Editorial

ONCE AGAIN the April issue of *The Health Bulletin* becomes a medium for recording events in State Health Work of great historical importance. This issue in the years to come should be of increasing interest to all students of the State's progress. It records complete success in the latest and largest item in material advancement yet made in the constant struggle to make the whole State a more desirable domain in which its people may live and work.

Fifty-four years ago this month—April, 1886—the first issue of this publication made its appearance. It marked a distinct and vital advance in public thinking. On numerous occasions since, these pages have chronicled an advance here or there, slowly, like an infant learning to walk. There have been some heartbreaking failures, but on the whole, living conditions, as a result of public health work throughout the State, have been revolutionized.

This issue is devoted almost entirely to the business of recording a correct and detailed account of the latest and greatest single step in the development of public health work since the creation of a State Board of Health by the General Assembly of 1877. The event is an epoch of such importance that every effort has been made to get the complete transactions recorded here. Reference is of course to the completion and dedication of the new Clarence A. Shore Laboratory buildings and farm, a main division of the State Board of Health. The dedicatory exercises took

place on February 21, 1940, in the new buildings adjoining the main administration building of the State Board of Health on Caswell Square in Raleigh. A full account of the exercises from the address of Governor Hoey on down follows in these pages.

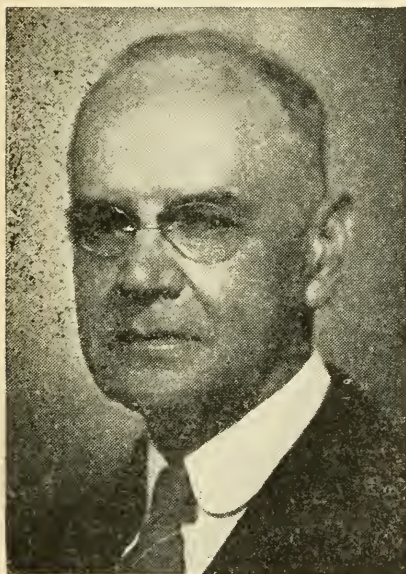
In a period of less than forty years the work of the Laboratory, which affects in one way or another every individual in the State, has expanded from an almost microscopical beginning to its present proportions. Today it would not be possible for the orderly processes of civilized government to go on in the State without the service of this great Laboratory.

In the thirty-two years in which the State Board of Health has carried on this work until the completion of this fine modern plant, the name of its founder and builder, Dr. Clarence A. Shore, has meant to the people of the State, especially to the physicians and their patients, what the rays of a lighthouse mean to storm-tossed ships. For twenty-five years he put everything he had into this work. His superb courage and devotion should be the eternal pride of the State. Indeed, at his death, February 10, 1933, the General Assembly then in session at once enacted into law the Resolution designating that all future buildings of the State Laboratory should bear his name. It was an honor worthily bestowed.

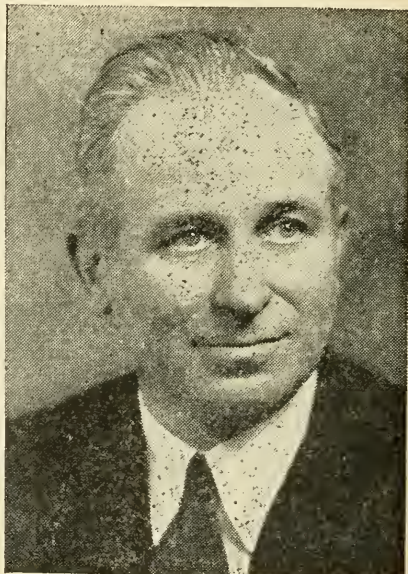
Following the death of Dr. Shore, the Board appointed Dr. John H. Hamilton to succeed him. Dr. Hamilton was well qualified for the place and for the past seven years he has

quietly worked to advance the efficiency of the Laboratory in every way. He had the usual handicap faced by every man whose lot it is to succeed another whose record is mountain-high. But he has not let that bother him, and today the State is indebted to Dr. Hamilton, Dr. Reynolds and the Board for their persistency in securing the new Laboratory and farm. Within a few years the people will fully realize the fact that this expansion will represent the best business investment of this biennium. It

is to be hoped that the students of civil government in the high schools, the college boys and girls preparing for life, the physicians and all other patriotic citizens will read and preserve this copy of the *Bulletin*. The State Board of Health and its Laboratory belongs to all the people. The sole motive for its creation and the only reason for its continued existence is to make life safer and longer for every human being born in the State and for the stranger within her borders.



DR. CLARENCE A. SHORE
Director, State Laboratory of Hygiene,
January, 1908, until his death,
February 10, 1933



DR. JOHN H. HAMILTON
Director, State Laboratory of Hygiene
for the past seven years

New Plant for the State Laboratory of Hygiene

By JOHN H. HAMILTON, M. D.

FEBRUARY 28, 1940, was the official completion date of the building program for the State Laboratory of Hygiene. These new buildings were made possible by the issue of \$160,000.00 of Revenue Bonds and the allocation of a Public Works Ad-

ministration Grant of \$130,909.00. The acquisition of funds from various sources brought the total cost up to \$308,000.00.

The plan consists of the Central Laboratory Building on Caswell Square, 214 West Jones Street, which was

dedicated on February 21st, as the Clarence A. Shore Memorial Building and the Laboratory Farm, located on U. S. Highway Nos. 1, 64 and 70, six miles west of Raleigh.

The Central Laboratory Building consists of four stories. On the first floor are located the mailing room, the media preparation room, the dish-washing and sterilizing room, a store-room, a small animal room and a machine shop. On the second floor are the business offices, the library, the water laboratory, the auditorium and the microscopic examination laboratory. On the third floor are found the filing room, the laboratory for serological examinations for syphilis and the bacteriological examinations. The fourth floor is devoted to the preparation of typhoid vaccine, pertussis vaccine, diphtheria toxoid, Schick Test material and the latter stages of the preparation of smallpox vaccine, diphtheria and tetanus antitoxin.

The State Laboratory of Hygiene Farm consists of approximately 280 acres, 80 acres of which is under cultivation—200 acres in woodland. The farm has a frontage of 1,550 feet on three National Highways and two railways. On this farm are located the farm laboratory building, two horse barns, one sheep barn, two

small animal buildings and a smallpox vaccine building, a root storage cellar and several wooden sheds. On the farm will be carried out the preliminary preparation of our antitoxins, our rabies vaccine and smallpox vaccine. The small animal buildings will make it possible for the laboratory to produce the guinea pigs, rabbits, mice and other small animals which will be needed in routine operations. It will also be possible to grow on the farm the feeds best adapted to the needs of our animals.

The physical plan of the State Laboratory of Hygiene will make it possible to increase personnel, improve services and extend activities if funds are available for those purposes. It is so designed that it does not necessitate the employment of additional personnel for its operation if no greater amount of service is to be rendered than the laboratory has been rendering in the past—in fact, certain economies may be effected which were impossible in the past.

The laboratory as an institution faces the future with the hope that its services may be in keeping with its traditions of the past, as well as the facilities made possible by its new physical plant.

Dedication Exercises State Laboratory of Hygiene

Raleigh, February 21, 1940

DR. S. D. CRAIG, President, North Carolina State
Board of Health, Presiding

Invocation by BISHOP J. K. PFOHL
Winston-Salem

BISHOP PFOHL: Our God and Father, Whose we are and Whom we seek to serve and glorify, we praise Thee for Thy goodness and mercy. We worship Thee and thank Thee for Thy manifold blessings, and we pray to Thee today, seeking Thy hal-
lowing presence and Thy loving favor

upon the ceremonies of this hour. We meet in Christian spirit and purposes and dedicate this Clarence A. Shore Memorial Building of our State Laboratory of Hygiene to the high and noble end for which it has been builded and to invoke this blessing upon the beneficent service. It is to minister to the physical well-being of all citizens of our Commonwealth who may need what it has to offer.

It is to be a center of that wide service which the Christian State seeks to render to those who live within its borders, that their bodies may be rid of disease and its attendant ills, that life may be less burdensome and hard and that they may be free to enter into that more abundant life of the Spirit which Thy living Creator has ordained for them. We pray for those who shall labor here, that they may have something of the vision of the Christ Who first gave to man the true sense of life, the high conception of the body as the dwelling-place of the immortal Spirit and Who inaugurated that ministry of healing which has brought such wide blessings to the sick and suffering everywhere. Grant them, we pray, compassion for those who suffer from bodily diseases and infirmity. Keep strong within them the spirit of benevolent service, and may they know that in the ministering to the needy, even the humblest and most neglected, that they are ministering to Him Who said: "Inasmuch as ye have done it unto one of the least of these, ye have done it unto Me."

We are deeply appreciative, Father, for the life and service of that humble and zealous follower of Thine who helped to lay the broad foundation of this work and whose deep consecration and labor and life are to be commemorated in this building. We thank Thee that Thou hast granted to Clarence Shore a noble vision of life and its possibilities, that there was implanted within him something of that same spirit of self-sacrificing service for others which was in Christ Jesus Himself. It was by Thy Divine guidance that he was led to see both the extent of human sickness and need, and the capacity of science and biology to meet it, that he dedicated his knowledge and talents to help in the ministry of the applying of the one to the other and in the course of his brief life was widely useful to his State, brought high honor upon it, and proved himself a real benefactor to his fellowman, are facts deemed worthy of commemoration, and we pray Thy abundant presence. May his memory be cherished and his name emulated and through this building and the enlarged service which it makes possible, may his name and his service be perpetuated, and all to Thy glory and to the blessing of man, God

grant it, we pray, in the name of Jesus. Amen.

Opening Address by DR. CRAIG

DOCTOR CRAIG: When the years shall have rolled by and I give intimate and retrospective appraisal for the record of the State Board of Health during the tenure of my office as its President, this day will stand out as significant, it will represent a dream fulfilled and the entrance into a field of service to humanity. The opportunity does not often present itself for me to give credit publicly to the loyalty and personal sacrifice that the members of the North Carolina State Board of Health has so generously given of their time and study to the problems that are constantly coming before the Board, and each member has measured up fully to all that could be expected. This accounts for other States looking to North Carolina for advice and help in improving their Health Departments. The Board is ever mindful that we could not attain the high standard that we are so proud of if it were not for the leadership and loyalty of every one of the several departments connected with it. I will not attempt to enumerate the heads of the different departments, but suffice it to say that they are outstanding specialists in their line of work. For my certain knowledge, most of them have been offered more money than they are now making.

Dr. Carl V. Reynolds, our Secretary and State Health Officer, has always been health-minded. This accounts for his being recognized, I may say the world over, as an outstanding public health organizer. It has been due to his vision and ability that all the departments are running so smoothly and efficiently.

Dr. George M. Cooper, our Assistant State Health Officer, has been connected longer than anyone else with the North Carolina State Board of Health. He is so valu-

able we just could not function without him.

In tangible terms, we are here to dedicate a new State Laboratory of Hygiene, attractively and modernly equipped, but the occasion has a far deeper significance than can find expression in this splendid physical outlay. Back of it all lies the spirit which prompted Senator Gravely to introduce the bill making possible the erection of this building, and with the untiring efforts from those who assisted him through our State Legislature. That spirit, ladies and gentlemen, was born of a desire to save human life through the instrumentalities afforded by preventive medicine. Furthermore, this Laboratory is more than a mere memorial to Dr. Clarence A. Shore, its founder and first director, whose name it will perpetuate through the coming generation. It will remain a living expression for the things this outstanding man for the sake of public health stood. When this great pioneer laid the ground-work which made it possible for North Carolina ultimately to launch an institution like this, he would have laurels for his life work.

Dr. Shore's successor, Dr. John H. Hamilton, the present Director of the Laboratory, is probably responsible more than any one man for the beautiful and so well-equipped new Laboratory. He has worked night and day to see that for every dollar spent we got an honest dollar's worth. Every citizen of the State is deeply indebted to Dr. Hamilton for his accomplishments.

It gives me pleasure to now turn this meeting over to Dr. John H. Hamilton, the Laboratory Director.

DR. HAMILTON: Governor Hoey, Dr. Craig, Honored Guests, Ladies and Gentlemen—It is with mixed emotions that we come to this hour. It is a solemn hour. It is a sad hour—yet an hour of joy. It repre-

sents the end of one chapter and the beginning of a new one in the history of the State Laboratory of Hygiene as an institution.

We come to reverence our honored dead and also for thanksgiving. The staff of the State Laboratory of Hygiene is deeply conscious of the significance of this service. We are thankful that the founder of our institution and its Director for twenty-five years was Dr. Shore. Many of our staff were closely associated with him for years. Some of us were denied the privilege of intimate acquaintance with him and must see him largely through the eyes of others more fortunate. We who had no experience with the charm of his personality nor felt the warmth of his kind spirit can see in clear perspective his high ideals of genuine service. We realize his unerring vision. A paper which he read twenty-two years ago outlining the functions of a public health laboratory is, with only one minor change, as true today as it was then. He chartered a straight course and neither adversity nor politics caused him to deviate from it.

Someone has said that tradition is the rudder which guides our destiny. We are thankful for the Shore tradition. We of the staff have a prayer upon our lips that the Shore tradition may guide our services in the direction which we should travel.

Today we are thankful for the State Laboratory of Hygiene's new plant. Few endeavors such as this could have needed more help than this one. Whenever and whatever help was needed there was always someone willing to give the necessary assistance. To this multitude of helpers we give thanks. We should enumerate them, but the list would be so long that the whole morning might not be sufficient for complete citation. To all we are genuinely grateful.

The announced purpose of these

services is to dedicate this building to Dr. Clarence Albert Shore. It is the fervent hope of the staff of the State Laboratory of Hygiene that we may also dedicate the services which we are permitted to render to this institution and that we may carry forward the ideals exemplified by Dr. Shore.

Since the turn of the century, North Carolina has been fortunate with its Governors. All have had high ideals of service. All have been in sympathy with the efforts to make North Carolina a better and safer place in which to live.

It is a known fact that our present Governor has long been a friend to the public health program. He uttered words pleasing to our ears before he was a candidate. He has been a true friend after his election. His name will be high on the list of those whom we would thank for helping make this building a reality instead of a hope of things to be.

If additional proof of his spirit and interest were needed, it is furnished by his acceptance, while still convalescing from his operation, of our invitation to assist in this dedication.

Governor Hoey, we are unanimous in the hope that your health is completely restored and that you will have many more happy and gratifying years in this land of the living.

Ladies and Gentlemen, I take especial pleasure in presenting our Governor, His Excellency, Clyde R. Hoey.

Address by GOVERNOR HOEY

GOVERNOR HOEY: Mr. Chairman, Ladies and Gentlemen—I am so glad to have the privilege today and share with you the fine satisfaction in the dedication of this splendid building and the operation of it and using it for the advancement of public health in North Carolina and in the world. I stand in admiration of the medical profession. I have had occasion right recently to have my admiration increased as well as my

recognition of their authority over everything when they take charge of it. While I was over in the hospital at Duke, just to refresh my mind, I read again Irving Cobb's "Speaking of Operations" and Will Rogers' "About Me and Ether." So I am very thoroughly informed about all the activities of the medical profession and I stand likewise in high admiration of their accomplishments.

I am glad to come today to help dedicate this building. I am tremendously interested, as you are in the public health program. I think this program is going forward splendidly. We realize that now preventive medicine occupies such a large place in the thought and activity and concern of people, and therefore, in North Carolina, we have been majoring in undertaking to save our people from diseases, from incapacities and preserve their lives in health and vigor, of mind and body. As we go forward in this great accomplishment, we have somewhat of the evidences of the statesmanship in medicine. You know some people always think of statesmanship as being confined to the forum of the public legislative procedures or the international affairs, and yet in the field of medicine and in the field of all the great sciences that go forward in the search for the things that shall benefit humanity, statesmanship is just as finely in evidence.

We come today to dedicate this building to a statesman, Dr. Shore, who occupied such a fine place and made such a rich contribution to his day and generation, and we today are continuing to receive the benefits of his study, of his work, of his leadership.

Judging from the appraisal Dr. Hamilton gave of Dr. Reynolds and of my own knowledge of him and appreciation of the fine leadership which he is giving North Carolina today, I have no hesitation of classifying him as a statesman in medi-

cine as he leads North Carolina in its great profession for the service and benefit of humanity. I am delighted to see the fine cooperation of all our institutions in this State, the great medical colleges of the University of North Carolina, Duke, Wake Forest, all combining and cooperating with the State Board of Health and all the activities which create in this State a very strong, fine force for the development and preservation of health and all the agencies which minister to it. You know in this century the average life of man has been prolonged about eight years. Of course, that has come about largely by the saving of so many children in infancy, but we will vary about eight years for the normal average of human life in this century. In North Carolina we have made a very fine record in that particular.

I was speaking not long ago in another State and had in the audience a large number of our Republican friends from all over the country, representatives of practically every State. I told them down in North Carolina that we had done so much in public health that Republicans live so much longer than anywhere on the face of the earth, and I invited them to come down here, and I thought then they would be very interested in our State Government just because it prolonged life so splendidly and abundantly.

I am always interested in the activities of doctors. I remember several years ago Dr. Howard Kelly over at Baltimore was delivering an address to the young medical students who had just completed their course, and he was giving this sort of advice. He said: "Young gentlemen, I want to tell you this about it. You enter very auspiciously into the practice of medicine. You are going to succeed a great number of times. You are going to fail a number of times, but I want you to just bear

this in mind, that about 80 per cent of all the people you go to see are going to get well whether you go to see them or not, so unless 80 per cent of your clients get well you are damaging them more than you are helping them, because nature goes a long ways to take care of it." However, nature needs our cooperation, and that is what statesmanship in medicine is doing today. It has undertaken to teach people in all walks of life just how to cooperate with nature and how to get results, how to get a return to health or how to so maintain ourselves in a healthful condition that we will not be subject to the various contagious diseases that sweep about, and then how to provide, as this Laboratory shall, the vaccines, all the preventions and the preservation against all of these contagious diseases, and it is reassuring today as we see the great vast number of children in North Carolina who are living more safely and more confidently and more assuredly by reasons of the treatment which has been provided for them and the vaccines which have been used to preserve them against all of these contagious diseases that used to sweep them away with such a mighty force as to amount to almost a pestilence.

I am very happy today to join with you, the doctors, the medical profession of North Carolina, as we come to dedicate this building, not alone in memory and in honor of a distinguished public servant, but in service to the people of North Carolina and to the people at large and to the world. Because out from this Laboratory and from its forces and influence and power shall go the thing that shall minister in a large way to the development and increase of the forces of our physical being in this State and to the preservation of the health and the humanity and the prolongation of life and to the bringing of the richness and fullness of the strong vigorous health to man-

hood and womanhood, even as they grow, our children in strength and in power to the development of a fine citizenship, I am happy to join you in this dedication today.

DR. HAMILTON: The discoveries of Pasteur, Koch and Jenner made possible public health work as we know it today. In the development of new-found land we start with discoveries, then we have pathfinders or trail-blazers, then come the pioneers who actually settle the land and make it produce fruit. In North Carolina we had two distinctive pathfinders in public health, Dr. Thomas Fanning Wood and Dr. Richard H. Lewis. No more distinctive group of public health pioneers could be assembled anywhere than we have on this stage at this moment.

It is not often that a hired man has an opportunity to say exactly what he wishes to his boss. Since 1935, when plans were first made for this new plant, our boss has had numerous reasons for being annoyed and disappointed, yet whatever his inward emotions have been his outward manifestations of them have been kindly and sympathetic. When the cause seemed lost or when we came to what seemed to be an insurmountable barrier, he would not admit defeat. Whatever the difficulty he could always suggest another move. It can truthfully be said that without Dr. Carl V. Reynolds as a master of strategy we would not be here today.

A genuine public health pioneer from the "Land of the Sky," city health officer when the going was rough, a distinctive practitioner, a State Health Officer with an outstanding record of accomplishments, and above all a good boss. Ladies and Gentlemen, Dr. Carl V. Reynolds.

DEDICATION NEW STATE LABORATORY OF HYGIENE BUILDING
North Carolina State Board
of Health, Raleigh

By

CARL V. REYNOLDS, M.D.
Secretary and State Health Officer

We read: "And God said, Let us make man in our image, after our likeness; and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth."

"So, God created man in His own image, in the image of God created He him; male and female created He them." And the Son of God said: "Inasmuch as ye did it unto one of the least of these, My brethren, ye did it unto Me."

Jesus went about ministering to the sick, the blind and the halt—expressing love, hope and charity and impressing upon His disciples the truth of the above saying that: "Inasmuch as ye did it unto one of the least of these, my brethren, ye did it unto Me."

Through God's power and benevolence, He has seen fit to allow man to discover, through biology, chemistry and research, the hidden enemies of humanity; to identify, clarify and neutralize their poisonous effects, in order that man might ever grow stronger, morally, mentally and physically.

"Even as the Son of Man came not to be ministered unto, but to minister and to give His life a ransom for many," so man's mission must be service before self. With this great lesson before us, what a tingle of joy and satisfaction it should give us to participate in the services that this Laboratory will make available to mankind! It could be called a building dedicated to "Man's Humanity to Man."

This building we are dedicating today is a real monument to the Christ-Child, Who grew to be the Samaritan who went about ministering to the unfortunate and the underprivileged. It has taken the world a long time to realize that the Master delegated to human instrumentalities the tasks which He began back in Galilee two millenniums ago; but, at last, we are beginning to realize that collective humanity is not only

morally obligated to administer good government, but to use its resources for the alleviation of suffering and for bringing the underprivileged to a point where they will be lifted out of their sphere of unhappiness and made to realize they are, after all, units in God's eternal order of things. Preventive medicine is doing as much to bring this about as any other human agency, and I take pride in this fact.

From this Laboratory we can and should expand our usefulness in making acceptable and available to all, by every means this modern world affords, the many conquests in medicine given us by Jenner, Pasteur, Laveran, Eberth, Koch, Loeffler, von Behring, Yersin, Reed, Schaudinn, Hoffman, Ehrlich and many others.

Yes, we are deeply grateful for this Department, but we should not be satisfied by using the results of past-masters' discoveries, but, instead, here and now, there should be set up a research department where the man or woman may explore in fields yet unknown. Through research we can evaluate our present knowledge and be placed in a position to make continued and lasting contributions to the world.

The search for knowledge will require financial support—but beyond and of greater importance still, it will take courage and faith, and the path will not be a bed of roses; but with talent, properly placed, coupled with indomitable will, vision, character and determination, success will follow.

Realizing that health is a basic factor in our economic and social structure, and is essential in the assurance of happiness, security and contentment, we must make available to all our citizens ways and means for the preservation of health and the prevention of disease, dedicating ourselves, and this Laboratory as an institution of service, creative in nature, through research and distribution, with a motto that there shall be nothing prohibitive to scientific knowledge within its walls.

"Lead, Kindly Light; lead Thou me on!"

DR. HAMILTON: Another genuine pioneer was the first man of science recruited by Dr. Shore for service in the State Laboratory of Hygiene. He had recently finished a course at the Massachusetts Insti-

tute of Technology and held a responsible position in Washington, D. C. He has given more than thirty of the best years of his life to the service of the Laboratory and has seen more years of service than anyone else on the staff of the State Board of Health. In an institution which must render overtime service whenever it is indicated in the interest of health or disease, life or death, he has rendered more overtime service than any of us, even himself, can recall—Mr. J. W. Kellogg, Assistant Director of the State Laboratory of Hygiene.

HISTORY OF THE STATE LABORATORY OF HYGIENE

By

J. W. KELLOGG
Assistant Director

The subject assigned me at the dedication of the new Shore Memorial Laboratory Building was the "History of the State Laboratory of Hygiene."

However, in the time allotted me, I can give only a short outline of the beginnings and development of the laboratory work.

In 1893 the first laws were enacted for the purpose of protecting the purity of public water supplies in North Carolina.

In 1895 Dr. Albert Anderson and Dr. W. T. Pate were elected bacteriologists for the State Board of Health.

In 1896 the Board passed a resolution requiring chemical and bacteriological examinations of municipal water supplies. Dr. Venable, of Chapel Hill, undertook the chemical examinations and Dr. Anderson and Dr. Pate the bacteriological examinations. In 1899 the General Assembly improved the laws protecting public water supplies.

In 1900 the State Board of Agriculture, on request of the State Board of Health, agreed to examine samples of water from public water supplies until the Board of Health could provide its own examiner.

In 1903 the Legislature enacted a law permitting the Board of Health to charge \$5.00 for each analysis of a public water supply, this fee to be used in paying the Department of

Agriculture for the services of the examiner.

In 1905 the Legislature established the State Laboratory of Hygiene; imposed a water tax of \$60.00 on all public water companies; voted \$600.00 annually for the support of the Laboratory. The small appropriation made it necessary for the Department of Agriculture to continue to assist the State Board of Health.

During the period until March 1908 the work was conducted by Dr. Gerald McCarthy, biologist, who received \$100.00 per month, who with the assistance of various chemists (receiving \$60.00 per month), made water analyses and tests of pathological specimens consisting mainly of smears for diphtheria bacilli, stains for tubercle bacilli in sputum and microscopic examinations of feces for hookworm disease. The modest beginnings are shown by the figures for the year ending May 1906; 1,096 specimens were examined, consisting of 591 samples from the 47 water supplies, 210 from private water supplies and 295 miscellaneous, for diphtheria, tuberculosis, hookworm, etc.

The 1907 Legislature amended the Act so as to give the Laboratory \$2,000.00 annually and at the same time increased the water tax by \$4.00 (originally meant to pay the express charges on the water samples), thus giving the Laboratory an income of \$6,000.00. During the year 1907 the Laboratory underwent a reorganization and refitting. Dr. Clarence Albert Shore, a native of Winston-Salem, M. S., University of North Carolina, M. D., Johns Hopkins 1907, was employed as Director at a salary of \$2,000.00 and Miss Daisy B. Allen, one of the first women graduated in chemistry at the University of North Carolina, as chemist at a salary of \$720.00. Dr. Shore took charge March 1, 1908, and during the balance of that year (ten months) the Laboratory made 1,690 examinations, including 906 water, 116 feces, 164 for tubercle bacilli, 222 diphtheria, 28 malaria, 6 gonococci, 91 widals, 33 for rabies, 4 miscellaneous, 80 urinalyses, 40 pathological tissues for malignancy, besides giving 42 Pasteur treatments.

An Act providing for the preventive treatment of rabies provided no funds, except that those able to pay were required to do so, but it was made free to all residents of the State unable to pay. In September 1903 Mr. W. L. Grimes and in October

1908 Mr. R. M. Grimm were employed temporarily as assistant biologists. During this period the Laboratory was housed in three small rooms and a closet in the old Agricultural Building, on the site of the present Agricultural Building. Dr. Richard H. Lewis was Secretary of the State Board of Health, and through his efforts and due to his influence the Legislature was induced to realize the needs for such an important development in the public health work of North Carolina. Another factor in making the establishment of the Laboratory possible was the demand for regular laboratory examination of samples of water from the public supplies of the State. Outstanding in their efforts to make this possible were Mr. Ernest B. Bain, of the Wake Water Company; Captain John C. Michie, of the Durham Water Company, and Mr. J. H. Bridgers, of the Henderson Water Company, who fostered the passage of the laws requiring the regular monthly analyses and the payment of the tax, which made possible the establishment of the Laboratory. The expenditure was amply justified by the growth of the Laboratory, 3,171 specimens being examined in 1909 and 11,644 in 1910. In December 1908 Mr. J. W. Kellogg was added to the staff as assistant biologist at a salary of \$1,200.00 and is now the oldest employee in point of service of the State Board of Health. In January 1909 the Laboratory was moved to more commodious quarters on the third floor of the Holloman Building, on Fayetteville Street. Dr. Shore kept his bachelor apartment at the head of the stairs leading to the Laboratory, and was thus convenient to receive late and early comers and attend to emergency calls at the Laboratory.

After seventeen years' service, Dr. Lewis resigned in 1909 as Secretary of the Board, to give his full time to his private practice, and at his suggestion, Dr. Watson S. Rankin was named Secretary in his stead. Dr. Lewis always continued to have a deep interest in the affairs of the Board and of the Laboratory.

In addition to the increased number of specimens examined in the Laboratory, the Pasteur treatment was administered to 355 patients during the first three years. This was made possible through the United States Hygienic Laboratory, which furnished the treatments free. The

Legislature made no appropriation for this work, but authorized the administration of the treatments when it would not interfere with the other work of the Laboratory.

In February 1909 the Legislature increased the appropriation, authorized the State Board of Health to arrange for a supply of reliable diphtheria antitoxin for indigent persons and appropriated \$500.00 annually to carry out the provisions of the Act. Contract was made with the manufacturers whereby the Laboratory acted as distributing agents to the cities and counties which took advantage of the proposition. Many took advantage of the opportunity to secure the antitoxin at the reduced rate, but even then only the indigent could benefit. At the suggestion of Dr. Shore the Legislature was induced to change the law, making it possible to supply all with antitoxin at the reduced rates. Two years later new contracts were made which made it possible to reduce the price on 1M units from \$2.00 to 50 cents, on 3M units from \$5.00 to \$1.35 and on 5M units from \$7.50 to \$1.95. As soon as this contract was made other manufacturers made similar reductions in price, thus making the savings available to all. The keeping of the antitoxin accounts necessitated the employment of a whole-time stenographer at this time, and Miss Ethel Waitt replaced Miss Mable Massey.

An important development during 1909 resulted from the law requiring analyses of all bottled and spring waters sold in North Carolina.

The publication of the names of three concerns selling polluted water had a salutary effect, and the result was a widespread effort on the part of owners to improve the sanitary quality of waters sold, not only in this but in other States.

The prevalence and economic importance of hookworm disease in North Carolina was made the study of the Rockefeller Sanitary Commission. Dr. John A. Ferrell was made Assistant Secretary of the Board of Health for the Eradication of Hookworm Disease. It was agreed that the examination of specimens should be made in our Laboratory. Dr. Shore employed the men and oversaw the work, the salaries of the microscopists being paid by the Rockefeller Commission. In June 1909 Mr. W. A. Shaw was employed for the work and in September Mr. C. F.

Kirkpatrick was added. Later on Messrs. Fred W. Conner, Henry C. Jackson, Arthur McKimmon and Grimes Cowper, Jr., were added. During 1910, 8,000 feces specimens were examined, 35 per cent of which showed the presence of hookworm ova. Later the plans were changed so that large numbers of the specimens were examined in the field, reducing the number sent to the Laboratory. In this way the examinations could be made and the treatments given by the field force.

The rapid growth of the Laboratory during the first five years is shown by the following figures: In 1908 the total was 1,690; in 1909, 2,902; in 1910, 3,702; in 1911, 4,939, and in 1912, 5,085 (in addition to the 22,000 feces examined in 1911 and 9,500 in 1912).

The Secretary of the Board had the following comments to make in one report: "The profession is showing increasing interest and appreciation and seems to be well satisfied with the work done in the Laboratory, and not a word of criticism has come to my office. The amount of work accomplished by Dr. Shore and his assistants, when compared with that of some other laboratories is, to say the least, unusual." The increased amount of work necessitated adding to the force, and in the Fall of 1910 Mr. T. C. Boushall and Mr. A. B. Greenwood were employed. Dr. Shore called attention to the fact that the number of water samples examined exceeded those made by any similar laboratory in the United States, and that it was due to the excellent laws controlling both municipal supplies and bottled waters. At this time North Carolina was the only State requiring such regular monthly analyses. During the first four years, 500 patients had been given the anti-rabic treatment with no fatalities. In 1911 the State appropriation was increased from \$6,000.00 to \$8,500.00, and in 1913 to \$13,000.00. Each year the work increased by 25 per cent and returned dividends to the State of over 750 per cent.

During November 1914 we began a series of daily examinations of raw and treated waters from each of the filter plants in the State, which resulted in benefits both to the water companies and to us, in point of the efficacy of the different purification plants. In 1913 Dr. G. M. Cooper made a plea for free typho-bacterin for the prevention of typhoid fever.

Late in that year we began the manufacture of our first biological product, typhoid vaccine, Mr. W. C. Riddick, Jr., being in charge of the work.

The County Health Department system of inoculation against typhoid fever was instituted and ten counties held clinics the first year, 137,000 doses being distributed.

In 1915-1916 we distributed 450,000 doses of typhoid vaccine and began the preparation and distribution of smallpox vaccine. In 1916 we spent considerable time in attempts to produce a bacteria free smallpox vaccine, after the method of Noguchi. However, we were forced to discontinue the work because of the short time this vaccine retained its potency. During these years the Director spent much time and thought in planning the new Laboratory building, where biologicals might be produced. During 1916, at a cost of \$12,750.00, the plant was built on Jefferson Street, and in January 1917 the Laboratory moved into its own building. Then began a real period of expansion of the work and facilities rendered by the Laboratory. In October 1917 we began the manufacture of triple (para) typhoid vaccine, distributing this when specified in place of the plain typhoid vaccine.

In December 1917 barn and stables were built at a cost of \$1,944.85 and \$713.21 was spent in equipment for the proposed manufacture of diphtheria antitoxin. During 1918 we began the preparation of diphtheria antitoxin. (Dr. A. B. Greenwood.) In February 1918 we began the serodiagnostic tests for syphilis. (Miss Mary Frank, serologist.) During that year the work was seriously hampered by war conditions and by the epidemic of influenza, which claimed one of our staff, Mr. W. C. Riddick, Jr. In 1918 we began the production of pertussis vaccine, and in 1919 the preparation of old tuberculin.

In June 1919 we made a beginning in the endeavor to immunize the children of our State by supplying toxin-antitoxin on a cost basis. For the first time in our State, or in any other State, campaigns against diphtheria were conducted, resulting in the immunization of over 13,000 children.

In August 1919 we began the manufacture and distribution of antirabic treatments. This was made after the modification of Pasteur's method used in the Hygienic Laboratory, USPHS, and we still continue this technique.

Being able to send out the treatments for administration by the local practitioner, we were able to save the patients the necessity of a three-weeks' stay in Raleigh to complete the treatment. Also in that year we began the distribution of Schick test outfits and controls. During this biennium, ending June 1922, at a cost of \$118,000.00, we gave services estimated at \$925,000.00. During the biennium ending June 1924 on appropriation of \$150,000.00, we gave services estimated at \$1.5 million. During this period we furnished materials for immunizing 281,000 against typhoid, 79,500 children against diphtheria and 87,500 against smallpox. In 1923 there was made a strong plea for a district laboratory to serve Western North Carolina. Dr. Shore was authorized to make a survey and submit a plan for such a laboratory. Mr. R. G. Martin was employed in 1925 to make the survey of existing laboratory facilities. The results of this work are on file, but due to existing conditions, no system of branch laboratories has been set up. Since this time Mr. Martin has been employed in the Diagnostic Department of this Laboratory. In September 1924 Dr. Shore stated to the Board that with the balance on hand (\$30,000.00) he would be able to provide additional needed space in the Laboratory for the expansion of the Biological and Serological Departments and have sufficient funds for the balance of the biennium. The Board gave its approval and during the period February to June 1925 a fireproof wing was constructed at the rear of the present building, also barns for the animals at a cost of \$19,689.00, which with the equipment costing \$9,105.00, were secured at no extra cost to the State. During this period it was estimated that the Laboratory saved the State over two million dollars.

In 1923 a physician was loaned to the Board by the International Health Board for antimalarial work in Eastern North Carolina. Certain mineral analyses of the water in streams in the district seemed to be indicated, and Mr. D. York Brannock was employed from June to December 1926 to make the analyses.

During the biennium ending June 1928, on an appropriation of \$150,000.00, the Laboratory is shown to have saved the State over \$2.5 million. Immunization against typhoid

fever and diphtheria began to show results, new low records in death rates being set for both causes. In 1927 Dr. Shore was invited to attend the International Conference on Rabies, in Paris, France, and was one of three from the United States to represent this country there.

In May 1927 we were called upon to send biologicals to the Mississippi Flood Relief and responded with 250,000 units of diphtheria antitoxin, 750,000 units tetanus antitoxin and 50,000 doses of typhoid fever vaccine. Because of information that Brills (endemic typhus) was prevalent in certain parts of the State we began making the Weil-Felix reaction on suspected bloods. Also at this time the State became Undulant Fever conscious and we began making agglutination tests for this disease. During the first year only six cases were diagnosed and it appeared that as yet Undulant Fever was not a serious public health problem. During the biennium ending June 1930 the receipts of the Laboratory were \$205,000.00 and the savings effected were reflected by the increased number of examinations made and the biologicals distributed. In April 1929 the Water Analysis Department was transferred to the Bureau of Sanitary Engineering to "provide a better correlation between laboratory and field work and to extend a greater service to the municipalities." However, after three months' operation the transfer was not approved by the Attorney General, and this activity was returned to the State Laboratory of Hygiene.

During the biennium ending June 1932 the appropriation was reduced to \$90,891.00 and receipts fell off, but the services of the Laboratory were continued as before. We discontinued the micro. widals on dried bloods and encouraged the sending of whole blood for the agglutination tests and clot culture for diagnosis of the enteric group. Other agglutination tests could also be made for Brills and Undulant Fever on the same specimen. During this period Bacteriophage therapy became quite popular and we distributed some which was obtained from the Lansing, Mich., Laboratories.

At the Board meeting in 1930 it was reported that "the State has in certain sections become more or less stampeded because of the existence of Undulant Fever." Dr. Shore reported that only six cases were diag-

nosed during the fiscal year, and that we were prepared to do routine tests for the disease on all bloods. He also announced that the Laboratory was ready to examine spinal fluids in suspected cases of meningitis and to supply the serum at cost to the physicians of the State.

In 1931 the Division of Laboratories was created and Dr. Shore was named Director. In reference to this Division, Dr. J. M. Parrott, then Health Officer, said: "The true value of the work of the State Laboratory of Hygiene could only be estimated if we could determine the number of lives saved and the amount of disease prevented. It is possible to compare the cost of operation with the amount which our people would have to pay to obtain the same service elsewhere. The activities of this Division are essential to the physical and material welfare of the State."

In the year 1933 the event of outstanding importance was the death of Dr. Shore, which occurred on February 10th. Dr. Shore had been Director for over twenty-five years and "had built up the work of the Laboratory to a point where its prestige and usefulness was equal to that of any other public health laboratory in America." Suitable tribute was paid by the State Board of Health and by the State Medical Society. By Legislative action all buildings of the State Laboratory of Hygiene are hereinafter to be known as the Clarence A. Shore Laboratory, in memory of his distinctive service. Dedication services were held on April 28, 1933, when addresses were made by His Excellency, Governor J. C. B. Ehringhaus, Dr. G. M. Cooper and Dr. J. T. Burrus, President of the Board. A bronze plate, with suitable inscription, was unveiled by Mr. George Worth, a favorite with Dr. Shore. To all his staff who served under him, these Laboratories will always remain a lasting memorial.

From February 10th until April 16th Mr. Kellogg was in active charge of the Laboratory as Acting Director. At that time the Board named Dr. John H. Hamilton to succeed Dr. Shore as Director.

During this biennium ending June 1934 the appropriation was further reduced to \$69,031.00, but the work went on with little diminution of the services rendered, saving the people of the State over two million dollars, or thirty times the amount of the appropriation.

During the biennium ending June 1936 the work increased 68 per cent, while the appropriation increased less than 25 per cent. In February 1935 we began making the Meinicke Clarification Reaction II as an adjunct to the Wassermann Test, making an average of 4,000 monthly, until May 1937, when it was discontinued because of the difficulty in making a satisfactory antigen. During 1934 we offered a new service to the physicians in the early diagnosis of syphilis by making darkfield examinations of Chancre Serum. The response to this has been at least disappointing in the small number of specimens submitted for examination. The physicians responded better in sending whole bloods for the diagnosis of enteric fevers, resulting in increases each year both in the number of cultures and agglutination tests performed. More typhoid vaccine was used than during any previous period. The increased amount of arsenicals sold was due to the concerted attempts to control syphilis. The demands on the Laboratory, especially for Wassermann Tests and for anti-rabic treatments, necessitated increasing amounts of overtime on the part of the staff. It was noted that the Laboratory saved the State at least two million dollars annually at this time. The increased activities demanded new and larger quarters, and at a meeting of the Board on August 22, 1935, Dr. Hamilton presented blueprint plans, sketches, charts, etc., of a new Laboratory Building and Laboratory Farm which the Board hoped to build with funds from WPA. An Application Resolution was adopted. During the biennium ending June 1938, the last covered by this report, we find that the work increased by more than 48 per cent and was by far the largest in the history of the Laboratory. During this period the \$160,000.00 revenue bonds were sold, which with a PWA grant of \$130,000.00, insured the building of the Central Laboratory on Caswell Square and Farm Laboratory Buildings, six miles west of Raleigh, opposite the WPTF Broadcasting Station, on U. S. Highways Nos. 1, 64 and 70. We participated in the second and third serodiagnostic studies conducted by the USPHS. We began the Kline Test as routine instead of the Wassermann and substituted the Eagle Complement Fixation test for the Wassermann as a confirmatory test.

Time will not permit me to outline the steps by which this fine new Laboratory was secured. Only the perseverance and resourcefulness of our Director, Dr. John H. Hamilton, could have surmounted the difficulties of accomplishing the reality of his dream. He typifies the spirit which has marked the loyalty and service of the entire staff during the thirty-one years, that spirit which characterized the life of our first Director, Dr. Shore.

DR. HAMILTON: Still another genuine pioneer, a country doctor in Sampson County, who practiced so much preventive medicine that he was soon part-time or altruistic health officer, later full-time County Health Officer and some twenty-five years ago was called to service as a staff member of the State Board of Health that he might serve one hundred counties instead of one. During the past quarter of a century he has been intimately connected with almost every branch of the work performed by the State Board of Health and has seen various methods tried—some succeed, some to fail. Today, no member of the staff of the State Board of Health has much faith in his own idea until it has been evaluated by Dr. Cooper. As a man with years of loyalty and conscientious service as well as a friend of Dr. Clarence A. Shore throughout his public health career—we present Dr. G. M. Cooper.

DR. CLARENCE A. SHORE AND THE STATE LABORATORY OF HYGIENE

By

GEORGE M. COOPER, M. D.
Assistant State Health Officer

From January 1, 1908, until his death, on February 10, 1933, the State Laboratory of Hygiene and Clarence A. Shore was synonymous terms in the State of North Carolina. It was unthinkable that one should be referred to without the other. Since the dedication of the Laboratory building on Jefferson Street in April 1933, these intervening years have only served to add

luster to the great record which he built for himself and for the State Board of Health and all of North Carolina in his twenty-five years' active service as head of the Laboratory work. For some of us who were in at the beginning of the first conscious need for laboratory service in this State and who are still in the ranks of active workers, the past thirty-five years have been notable ones.

I can speak best in a personal sense in this brief consideration of Dr. Shore's work. In any intelligent understanding of what Dr. Shore and his work meant to the State, and particularly to the State Board of Health, it is necessary to go back to the beginning of the century and to the work of that great medical statesman, Dr. Richard H. Lewis. Dr. Lewis, although a part-time State Health Officer and making a living in the practice of medicine, had very clearly seen the vision of what public health would soon come to mean, especially to the Southern States. His problem was to arouse his contemporaries in the medical profession and in the Legislature to the coming needs. He had succeeded so well in making his position known that he had already become an important figure in the American Public Health Association and was later to become President of that organization. Dr. Lewis was part-time Secretary of the Board from 1892 until his voluntary retirement in 1909. During the first few years of that service, the whole world was just beginning to take note of the importance of bacteriology and of laboratory methods as applied to the work of the private practicing physician, as well as to public health. The Mossbacks in medicine, just as the Old Guard in politics, never surrender. They never learn anything new and they always oppose progress of any kind. But Dr. Lewis battled away for his convictions. In the face of indifference and down-right opposition, he made considerable progress; as early as 1896 he arranged for bacteriological work to be done for the Board of Health. This was done at Chapel Hill until 1900, when he arranged through Legislative provision for the Department of Agriculture to make analyses of water for the Board. This work was strengthened in 1903 and that year Stiles made his revolutionary report to the North Carolina Medical Society at Hot Springs, which began

the revolution in thinking among the physicians of this State along lines of public health and laboratory methods. The Mossbacks were then on the run.

In 1905 the General Assembly established the State Laboratory of Hygiene, to be supported by a tax on all public water companies, which was to supplement its \$600.00 annual appropriation. The Department of Agriculture continued to be the dependence for analytical work. The technician in charge was Dr. Gerald McCarthy. He knew little if any pathology and was not sufficiently acquainted with the needs of the practicing physicians in the State to do much with the work except to make analyses of public water supplies.

I began the practice of medicine that year, and as I was fresh from medical school, fully imbued with the necessity for laboratory work and laboratory practice, it was a shock to me to find how little dependence was put on such methods of precision by the average practitioner of medicine and how little assistance he could obtain anywhere in carrying on such work. To me, as a practicing physician in a country town, the advent of Dr. Shore in full charge of a laboratory to be under the specific direction of the State Board of Health, beginning in January 1908, was like a breath of fresh air. Dr. Shore immediately set to work to assemble sufficient equipment to carry on modern laboratory work which was set up over one of the stores on Fayetteville Street. This equipment grew little by little in the Fayetteville Street location, until the work outgrew the quarters, and at the end of eight years in that location, Dr. Shore and his workers moved into the new Laboratory on Jefferson Street in 1917.

It might be said that the first period of laboratory work was registered in the valiant efforts of Dr. Lewis from 1896 until the culmination of his own laboratory in 1907 and the employment of Dr. Shore in December of that year to begin the direction of the work in 1908. The second period and the one of foundation growth might be recorded as the eight years in the Fayetteville Street location. Dr. Shore secured the Jefferson Street location and designed the plant there with the idea of that plant being sufficient for the needs for about twenty years. Thus,

today, twenty-three years after the establishment of the Jefferson Street Laboratory, we move into this plant here, and the third phase of the State Laboratory of Hygiene is now behind us.

One of the first important acts of Dr. Shore was to secure the services of Mr. J. W. Kellogg, fresh from the Graduate School of the Massachusetts Institute of Technology and a promising chemist. Mr. Kellogg came with Dr. Shore in December 1908. Dr. Shore had the faculty of picking competent help and by setting the example of fair treatment and hard work himself, he was naturally assured of the loyalty of his organization at all times. Chief among his aides, however, in building the Laboratory to an institution of national reputation was Mr. Kellogg. He has served longer in an important capacity with the State Board of Health than any other man ever employed by the Board. Today, I take off my hat to Mr. Kellogg and hope that he will go on many more years in the important work he has done so well and so long.

Dr. Shore literally lived with his work twenty-four hours a day, three hundred and sixty-five days in the year. As I have said many times before, I never think of Dr. Shore without being reminded of Osler's introduction to "A Life of Pasteur," that "he was the most perfect man who has ever entered the kingdom of science." Dr. Shore was one of the best trained pathologists in the whole United States. Laboratory technique was literally the breath of life to him. He loved his work and he kept abreast of every item of progress in laboratory work throughout the world. Dr. Shore had a mania for putting laboratory facilities at the service of all physicians and through them to the poorest people in the State. He felt that no practicing physician anywhere should be without the facilities of the Laboratory when needed for any individual in his practice.

In 1910, two years after Dr. Shore came to the Laboratory, when Dr. Ferrell took charge of the organization of the work for hookworm eradication in the State following the appropriation of a million dollars by Rockefeller and his establishment of the original hookworm commission, Dr. Shore naturally fell into the plans with enthusiasm. He and his aides worked day and night in as-

sisting the district physicians under Dr. Ferrell in checking on microscopic examinations in the hookworm work, and afterward he often said that the real beginning of public health work in this State was the work done by Dr. Ferrell and the corps of young men under him, working with the part-time county physicians and the State Board of Health and the Laboratory, especially during that year, 1910 and through 1911.

As an example of Dr. Shore's efforts to bring laboratory methods down to the people, the finest illustration is the fight that he made before the Legislature of 1911 for a reduction in price of diphtheria antitoxin. I was part-time county physician in Sampson County at that time. It was my duty to visit all of the poverty-stricken families in the county in which diphtheria had struck with all its virulent force; scores and scores of children had the disease and large numbers of them died. At that time we were paying the biological houses \$7.50 for a 5,000-unit dose of antitoxin. It was then as now the only treatment that could help a patient with diphtheria. This was at wholesale cost to us as practicing physicians. It was utterly beyond the means of 75 per cent of the patients who had the disease. Dr. Shore was greatly distressed with this situation. Those of us throughout the State who were practicing medicine could not afford to see any child die without making an effort. All of us obligated ourselves beyond our means to provide diphtheria antitoxin. Dr. Shore figured that it could be supplied at a great deal less cost. He therefore requested a thousand dollars appropriation from the Legislature of 1911 to use as a revolving fund. His purpose was to contract with some biological house at greatly reduced cost, buying in this small wholesale lot to supply to the physicians at cost, the fund simply to be used as a revolving one. Through the aid of a few members of the Legislature who had been his personal friends at the University of North Carolina, he succeeded in getting this appropriation and the permission of the Legislature to provide this urgent need, particularly to poor folks. The result was that overnight diphtheria antitoxin fell from \$7.50 to \$1.95 for the 5,000-unit packages. No one can ever even estimate the number of children's lives who were saved by that measure. Only a few

years later he had courage enough to ask for the authority to manufacture his antitoxin himself on the Laboratory grounds, which was granted to him, and the price then fell to 25 cents a package, regardless of unit dose. This later move produced a great deal of opposition and some of it from friends who should have known better.

The intervening years have proved the wisdom and righteousness of his move. At the time these acts were recorded, there was no such product as toxoid or vaccination against diphtheria. It could only be dealt with after it occurred. If Dr. Shore had no other record left behind him, his work in this one particular would be bigger than a monument a mile high.

As a physician who was practicing medicine when there were no laboratory facilities available at all to the practitioners in small towns and country districts in this State and who has seen the development of this enterprise and who has been a part of it for twenty-five years on this ground, I feel that the people of the State should consider themselves always in debt to Dr. Shore and his associates and helpers and successors in this great work. I hope that the present management and the organization which becomes responsible today for carrying on this indispensable State service may be successful in sustaining the fine reputation for the institution made by Dr. Shore and carry it on to even greater heights in the years to come, until no man, woman or child within the bounds of the State shall fail to receive the benefits from this institution. I feel that if Dr. Shore could join this group right now, his greeting to the members of the Board, the Governor, the Legislature and Doctors Reynolds and Hamilton, and all others who were responsible for this last and greatest progressive step would be "Well Done."

DR. HAMILTON: And yet another genuine pioneer in the field of public health—a county Superintendent of Education, a country doctor, an administrator in the early days of the hookworm campaign, a member of the staff of the State Board of Health, an administrator and later Associate Director of the International Health Division of the Rockefeller Founda-

tion, a man whose ability and outstanding service placed him so high in the field of public health workers that the American Public Health Association honored itself by making him its President. Although duties called him to all parts of the world, he never forgot the State of his birth and returned to North Carolina whenever an opportunity presented itself. In all of these visits to his home State he always endeavored to see the friend of his early manhood, Dr. Clarence A. Shore. It is particular fitting, therefore, that we present Dr. John A. Ferrell.

Address by

JOHN A. FERRELL, M.D., Dr.P.H.*

At the Dedication of

The Clarence A. Shore Memorial
Laboratories

Your invitation to participate in these exercises today is highly appreciated, first, because I am happy to pay tribute to Dr. Clarence A. Shore, one of the leading pioneers of the country in the development of public health laboratory services, and second, because the completion and equipping of the new, modern and adequate Clarence A. Shore Laboratory buildings mark an important milestone of progress in the North Carolina public health service. I should like to dwell briefly on both topics.

The State Public Health Laboratory service in North Carolina has been a creation of Clarence Shore during his twenty-five years of service as its Director. The early but limited steps taken to provide laboratory service took definite shape in 1907. Dr. Richard H. Lewis, then Secretary of the State Board of Health, secured authorization from the Legislature in 1905 for the establishment of a Laboratory. In 1907 he obtained a small appropriation for a modest beginning and in that year induced Dr. Shore to become Director of the Laboratory. Dr. Lewis in later years referred with pride to his participation in the Laboratory development. He regarded it as one of the most important contributions

*Associate Director of the International Health Division of the Rockefeller Foundation, 49 West 49th Street, New York, N. Y.

he made during his seventeen years (1892-1909) of service as Secretary of the State Board of Health. Another event in which Dr. Lewis took great satisfaction was his participation in the selection and appointment of Dr. Watson S. Rankin as State Health Officer to serve on a full-time basis as successor of Dr. Lewis, who insisted on retiring as Secretary in 1909. I remember the occasion well, because early in 1910, when Dr. Lewis and Mr. J. Y. Joyner, then State Superintendent of Education, were called upon to recommend a Director for the Division of Rural Health Service, which the Rockefeller Sanitary Commission supported, I was selected. These men had known me as a teacher, a medical student, a County Superintendent of Schools, a physician, and a County Superintendent of Health. In March 1910 I moved to Raleigh, and my close association with Doctors Shore and Rankin in the State Health Service began, and it continued pleasant and stimulating through subsequent years of close friendship. Doctors Rankin, Shore and I were highly pleased when Dr. Lewis on occasion would affectionately refer to us as his "three boys."

Dr. Shore entered the University of North Carolina in 1897. I knew him there for three years prior to 1902, while I was also a student at the University, as a man among men and as the able assistant of Mr. H. V. Wilson, Professor of Biology. During my period of service in the State Department of Health (1910-1913) as director of measures in North Carolina against hookworm disease, and during the incumbency of my successors, Dr. Shore selected, trained and supervised the Laboratory technicians who examined the specimens for the five mobile field clinics, and for the physicians of the State. Moreover, for many months after I came to Raleigh, we dined at the same place. After I went to Rockefeller Foundation headquarters in 1913 I was fortunate enough to return to North Carolina and see him two or three times yearly. The association on such occasions was always pleasant and highly treasured. Through these contacts I came to know Dr. Shore well as a man and as a scientist, as a friend, and to learn of his ideals, character, policies and conception of service to his fellow-men. His published articles were able, brief, clear-cut and reflected his char-

acteristic gentility, modesty, straightforwardness, thoroughness, simplicity, intellectual independence and courage. These and other admirable traits were described by Dr. G. M. Cooper and Professor H. V. Wilson at the memorial exercises on April 28, 1933, when the Clarence A. Shore Laboratory of Hygiene Building on Jefferson Street was dedicated to his memory.

Dr. Shore was graduated in medicine at Johns Hopkins University Medical School in 1907. In 1929 the University of North Carolina awarded to him the degree of Doctor of Laws in recognition of his contributions in the field of public health. He was married May 27, 1914, to Miss Ellen Dortch, of Raleigh, who survives him and who sometime after his death became an employee of the State Department of Health and is still on its staff. The development of the Laboratory has been remarkable. In the beginning, Dr. Shore was aided only by Mr. Kellogg and two or three others; today there are at least forty-five employees. The number of examinations made in the Laboratory yearly increased from 1,663 in 1908 to 463,004 in 1939, and the expenditure grew from less than \$10,000.00 yearly in 1908 to \$123,000.00 in 1938. These figures reflect phenomenal progress. From 1906 to 1917 the Laboratory was housed on the third floor of the Holloman Building on Fayetteville Street and from 1917 until the present year in a State-owned one-story Laboratory Building on Jefferson Street. Today we are gathered in the assembly hall, which is located in the new, commodious, four-story Laboratory Building, which in conjunction with the buildings on the biological farm, six miles west of Raleigh, on U. S. Route No. 1, now ready for occupancy, constitutes the entire Laboratory plant. This excellent Laboratory setup is only approximated by Georgia in the States of the South. That North Carolina has achieved this high standard of development reflects able leadership by the State Department of Health as a whole and particularly the laboratory division. As compared with other States, like New York, Massachusetts and Michigan, having similar laboratory plants, the North Carolina expenditures for all purposes, including plant, salaries and all other items, have been very conservative, but even the amount spent in North Carolina would probably not have

been obtainable, except for Dr. Shore's leadership. His exceptional ability and zeal inspired confidence in all quarters. He was trusted by successive Legislatures and by the medical profession throughout the State. The Shore character and philosophy made the Laboratory a strong and stable institution.

The very small turnover in the Laboratory staff reflects devotion to Dr. Shore by those who served with him. Nineteen members of the present staff have served continuously for ten years or more. Of these, sixteen have had fifteen or more years of service, seven have had twenty or more years, three, twenty-five years or more, and Mr. Kellogg, the senior in term of service, has served thirty-one years. This continuity of service speaks eloquently for the high regard of the staff for the Director, his standards and his consideration for others. Though modest, Dr. Shore was original, self-reliant, progressive, industrious and persistent. He was imbued to a rare degree with the spirit of public service. The physicians of the State accepted without question reports of laboratory findings sent out over his signature. His attitude was reflected to some extent by the following statements he published in 1918:

"There is no real basis for a sharp distinction between cure by the private physician," he stated, "and prevention by the public health officer. On the contrary, they are closely related and interdependent. There is nothing nobler in the everyday life of mankind," he continued, "than the unquestioned service of the family physician in preventing sickness among his patients."

Dr. Shore made his laboratory the common ground for understanding between the private physician and the public health worker. He invited criticisms and acknowledged errors with rare grace. His association with his colleagues and subordinates was free from formalities. His exercise of authority was unobtrusive. He sought the truth and followed it. He was guided by logic rather than by impulse. His personality and attitude produced an atmosphere of respect, confidence and ease, which won him affectionate loyalty and inspired his staff to do its best.

An appraisal of the value of the services rendered by Dr. Shore and his Laboratory to North Carolina cannot be made in exact terms. He

regarded as one of the prime functions of the public health laboratory aid to the physician in every practicable manner in the diagnosis, prevention and treatment of transmissible diseases. Dr. Shore, according to Dr. Cooper, likened sending physicians out to fight disease without the aid of modern laboratory facilities and products to sending soldiers out to fight the enemy unarmed. He was intent upon supplying diagnostic service and biological products of the best quality for prevention and treatment free to the patient or at a cost within his reach. Illustrative of this objective, he was able in one step to reduce the cost of diphtheria antitoxin, says Dr. Cooper, from \$7.50 per therapeutic dose of 5,000-unit package to \$1.95 and later to 25 cents. Multiply this by the eight or ten other products which he found it advantageous to manufacture in the State Laboratory of Hygiene and approximately ten others which he procured ready-made at wholesale prices and distributed free or at moderate cost, and you begin to get a picture of the money value of the Laboratory to the people of the State. The effectiveness of this service in achieving the main objective—the saving of human life—is impressively reflected by the marked reduction in the incidence and death rates in the State of the diseases in the handling of which the Laboratory aided.

Another broad and essential field of service which the Laboratory developed and maintained relates to making public supplies of water safe for human consumption. In fact, this was one of the first major objectives of the Laboratory. Its pioneering activities with respect to safe supplies of drinking water paved the way for the development of the Division of Sanitary Engineering, which likewise has rendered distinguished service to the State in safeguarding, and in fact guaranteeing, safe public water supplies. The Laboratory and Sanitary Engineering Divisions complement each other in safeguarding the State's drinking water. Every public water supply is tested as to quality. Each sample of water is subjected to bacteriological and chemical examination. The State Laboratory makes some of these examinations and some may be made in local laboratories in accordance with standards prescribed by the State Laboratory. That one can be sure the water

supply in every town of any size in the State is safe is a tribute to the health forces of the State in which all divisions have shared, but in which conspicuous services have been rendered by the Laboratory and Sanitary Engineering Divisions.

No modern community would now be without public health laboratory services. What it has meant to North Carolina in combating disease, death and disability is emphasized by the phenomenal reduction in death rates from certain diseases, including the following:

	1916	1937	1939
Typhoid Fever.....	29.2	2.2	2.0
Diarrhea and Enteritis.....	77.9	29.0	18.9
Diphtheria	17.1	4.6	4.9
Hookworm Average—Counties:			
1910-1914	36.6		
1935-1937	12.3		

To enumerate all the important activities of the Laboratory would call for more time than is allowable today. Suffice it to say, tests for approximately twenty diseases are made in order to aid physicians and health officers to arrive at correct diagnoses. In 1939, 370,959 examinations were made for syphilis alone. The remaining 92,045 included tests for tuberculosis, malaria, rabies, diphtheria, typhoid fever, etc. The total of 463,004 examinations for that one year was equal to 36,583 a month, 1,286 daily. If a money value of only \$2.00 for each examination should be applied to the diagnostic branch of the Laboratory, the total would be \$824,000.00 for the year. This amount is about six times as much as all the work of the Laboratory cost the State that year, but it represented only about two-thirds of the Laboratory activities.

Let us view from another angle what the Laboratory has meant to North Carolina. Although it distributes more than fifteen products of value in the prevention of disease, Dr. Hamilton reports that since 1920 it has distributed vaccines sufficient to immunize 6,335,000 persons against typhoid fever and 4,609,000 persons against smallpox. Whether or not every man, woman and child in the State has been immunized against these two diseases may be questioned, but if not, responsibility for any failure cannot be placed on the Laboratory. Considering the other protective products distributed by the Laboratory during the same period, among them for example, 23,386 anti-rabic treatments, it would seem that a vast majority of the people of the

State at one time or another has been saved from illness or death because of services rendered by the Laboratory.

I have emphasized the value of the Laboratory to the patient, the family, the doctor and the community. It contributes to the safety and well-being of nearly every family of the State. Its varied kinds of usefulness include or should include two other types of service. One involves epidemiological studies of prevailing diseases, the other laboratory researches. Each is of vital importance in supplying the public health executive with specific knowledge essential to formulating sound policies and procedures for the health forces to follow. Their performance may not be clearly appreciated by the rank-and-file of the people, but nevertheless they are vital. They require the services of trained personnel, which in turn call for salaries and operating expenses. Their cost should be adequately provided for along with the other essential Laboratory services.

The two may be closely related and would not be considered separately by some authorities, but it is clarifying to look at them separately. For purposes of this discussion, we may think of the epidemiological studies as those directed to diseases occurring in the communities, their sources, modes of spread and how to check or combat them. This kind of research among the people requires personnel trained in epidemiology for the field studies supported by the diagnostic facilities of the Laboratory. The qualified epidemiologist is constantly on the lookout for the appearance of epidemic diseases in his area of responsibility. Just as the fire-fighters of the forestry service detect the first appearance of smoke and rush to the spot from which it comes to extinguish the fire before it gains headway, the epidemiologists attempt to prevent the occurrence of disease, but if it does appear they combat it vigorously before it attains epidemic proportions.

Activity of this kind by the epidemiologist is absolutely essential in combating epidemics. "Trouble-shooting" is the term usually applied to it in public health circles.

There are other extremely important problems to which the epidemiologist must direct attention. Their solution involves well-planned and

thoroughly-executed studies. They call for the systematic collection, analysis and interpretation of all obtainable relevant facts. They may necessitate the discovery of new knowledge regarding diseases or problems. The task may be baffling, time-consuming, expensive and without spectacular features. Yet such studies are essential to a maximum of efficiency and progress.

The present studies being made in North Carolina regarding malaria illustrate the type of epidemiology I have in mind. In counties in which the disease is found to be of public health importance, the local Health Department is aided by the State Health Department. Personnel from the Division of Epidemiology help to set up plans for the evaluation of the malaria problem. Among the steps usually taken, the following may be mentioned: Blood specimens from the school children are collected and sent to the State Laboratory for examination. The homes in which malaria is discovered are spotted on a map of the county and other neighboring homes are also located on the map. The breeding-places of anopheles mosquitoes that transmit malaria likewise are sketched on the map. These and other pertinent data are studied by the epidemiological and engineering personnel, with a view to the formulation of preventive and control procedures. Drainage may be carried out wherever practicable to stop the mosquito-breeding, and in other situations screening of the houses may be carried out. In some neighborhoods both measures may be employed. Again, quinine or other drugs may be used to give either protection or cure.

The local Health Department is involved in every step. It collects the specimens of blood and shares in the supervision of control measures and in the follow-up activities directed to their maintenance.

Again, in the program for the control of syphilis, the Laboratory and the Division of Epidemiology work in close cooperation and give support to the local Health Departments. In the clinics specimens of blood to be examined are collected and treatments are administered. The Laboratory examines the blood and reports its findings. These procedures are routine and customary. But special studies in addition are extremely important. They should in-

volve the clinician, the epidemiologist and the Laboratory staff. Among the objectives may be mentioned ascertaining the effectiveness of the diagnostic and curative procedures; their improvement when needed; measurement of the incidence of the disease in the community and of progress in bringing it under control; discovery of the chief factors responsible for its presence and spread; and a determination of the procedures which will yield the best results for the available funds.

Special studies of syphilis along these lines are already under way in North Carolina and are to be expanded soon. They involve participation by the State Department of Health through its Laboratory and Epidemiological Divisions and the University at Chapel Hill through its medical and public health schools.

Another research project of fundamental importance is getting under way in North Carolina. It relates to nutrition and to the dietary deficiencies which cause pellagra, rickets and many other ailments and the attendant disabilities among the people. The problem is complex and difficult. Its proper study calls for team-work by a group of experts skilled in clinical medicine, biochemistry, physiology and epidemiology. The present public health Laboratory techniques will be employed, but additional tests and diagnostic procedures will be required. Some of them are new and others are yet to be discovered and perfected. The setup has been made possible through the cooperation of the State Department of Health and the Medical School of Duke University. When the studies have progressed far enough to make it possible to adopt sound corrective programs, it is probable that several State and community services will be afforded opportunity to participate. That is to say, there will be work to be done by the community, the family, the doctor, the public administrators and by the Departments of Education, Welfare, Agriculture and Health. I am happy that the organization with which I am connected has been able to furnish some aid to the syphilis and nutrition studies in North Carolina and to a number of other studies elsewhere.

These fundamental studies involve considerable time, expense and the services of a variety of scientists. But they are essential to the formulation of sound policies and proced-

ures for the guidance of the health organizations and other branches of the Federal, State and community services. The three studies mentioned that are now underway in North Carolina, relating to malaria, syphilis and nutrition, are illustrative of several other lines of research in which the Laboratory, Epidemiological and other Divisions should share. The information derived from such studies should afford a basis for wise action to the health executive, the legislator and the taxpayer. They should make possible definiteness, effectiveness and economy in the application of the principle that "an ounce of prevention is worth a pound of cure."

The epidemiologists, whether engaged in trouble-shooting or in long-term fundamental studies, to be successful must have the support in every community of a full-time local health department. Such an agency in the community is essential also in supplying to the families and physicians the facilities and products of the Laboratory promptly as they are needed.

When laboratory techniques need improvement, there is experimental work to be done. When gaps in present knowledge limit prevention and control measures, the Laboratory should share in researches designed to discover the information needed. Success in the quest will contribute to perfecting control procedures. When funds are inadequate for all essential Laboratory services, and when keeping up with the routine activities taxes the capacity of the staff, it usually follows that these needed epidemiological and research features are omitted, or at least not adequately provided for. Such restrictions in the functioning of the Laboratory should be regarded as short-sighted, illogical and risky.

We have in North Carolina in the history of the Shore Laboratory of Hygiene a thrilling record of growth and efficient service. Dr. Richard H. Lewis, the lovable, able and far-sighted Secretary, serving on an altruistic basis practically without compensation, placed the State health work on a full-time basis, secured authority and funds for the Laboratory, found Dr. Shore and placed him in charge. Then for a quarter of a century the Laboratory grew rapidly under Dr. Shore's able leadership, until in the whole South the quality of its work was not excelled and the

scope of its work was equaled in only three or four States. Then (May 20, 1933) came Dr. Shore's successor, Dr. John H. Hamilton, who has maintained the Shore tradition. He has kept the Laboratory in the front line of progress. He has made it render the maximum of service practicable under the available resources. The growth in its activities and usefulness has continued. The volume of work in the Laboratory outgrew the capacity of the Jefferson Street building several years ago. Dr. Hamilton, in the face of discouraging setbacks and difficult financial problems, pressed hard and tenaciously for modern laboratory facilities. With the backing of Dr. Carl V. Reynolds, the present State Health Officer, and the State Board of Health, he planned this new Laboratory plant and supervised the construction. We are here to celebrate the life, not the death, of Clarence A. Shore and the consummation of Dr. Hamilton's dream. This magnificent, four-story building and equipment, together with the modern buildings at the biological farm, are all ready for occupancy. Their completion and equipment represent a great achievement. During the time I was on the staff of the State Department of Health (1910-1913), if anyone had predicted such a development by 1940 I should have regarded him as mentally unsound. Suppose from afar in their final resting-place Dr. Lewis and Dr. Shore should gaze on this State health organization, with its great Laboratory building, equipment and staff. Would not they rejoice at what has come to pass? Would not Dr. Shore derive keen satisfaction to observe that his name, his likeness, his ideals and philosophy live on as an inspiration to his successors and colleagues in North Carolina's Laboratory service? This is a fine and appropriate way to pay tribute to Dr. Shore, the gentleman, the scientist, the benefactor, the friend.

Dr. Hamilton realizes that the Laboratory is only one of eight divisions of the State Board of Health—not to mention its central administrative activities. When attention is focused on the Laboratory today he, in his own words, states: "That it is only one of eight divisions of the State Board of Health each supplementing the other. Without the work of one, the work of all others would be less effective. Their common objec-

tive is the promotion of human welfare," particularly in the realm of health and physical and intellectual efficiency. The other divisions are county health work, preventive medicine, epidemiology, statistics, sanitary engineering, oral hygiene and industrial hygiene. There are subdivisions, for example, preventive medicine includes crippled children, maternal and infant care, health education, etc. County health work includes public health nursing. The scope of its work is ever expanding to keep pace with growing knowledge of diseases and of methods for combating them. When one branch of the health service is logically expanded, then the organization as a whole expands, and this reacts on and increases the work of other divisions. When, for example, the county health work expands, the routine services of the Laboratory must expand. And this local health service must be extended and intensified until every family in the State is supplied with all the health protection which an adequate county health service can furnish. Enlargement of the activities of the Divisions of Epidemiology and Sanitary Engineering likewise give rise to larger and larger laboratory services. Moreover, as the practicing physicians to an increasing degree "apply the ounce of prevention," they will call for more and more service by the Laboratory. Their needs involve diagnostic, chemical, bacteriological and biological facilities. But there are still other demands which the Laboratory in the future must satisfy. One by one, the secrets of baffling diseases are being solved. The Laboratory in each case has found it necessary to take up new work. Who can tell how soon diagnostic service for some of the virus diseases like infantile paralysis, encephalitis and influenza will be included among the activities of the public health Laboratory? Already the Laboratory tests now available and those being developed for evaluating the status of dietary deficiencies of the individual and of the families of the community confront the Laboratory with an entirely new and at present difficult lot of examinations. It would be as hard to forecast what the Laboratory service of the State Health Department will be thirty years hence as some of us found it to visualize in 1910 the setup we have in 1940.

We should not hesitate to predict

that there will be enlarged laboratory service throughout the State. This means that local laboratories will be improved and new ones developed where needed. The State Laboratory should give leadership and support wherever needed, to the end that the personnel will be fully trained and otherwise qualified and the techniques and procedures maintained at a high level of efficiency. The objective will be to render efficient laboratory services to every community as promptly as the situation demands. The research and epidemiological work of the Laboratory should be expanded. The present program conducted by the University, with the cooperation of the State Department of Health, of recruiting and training personnel for all kinds of health services will be strengthened and expanded. In this program of training public health personnel the Laboratory should participate. The loss of trained personnel to other States that have more liberal salary scales is expensive from every angle and limits progress in North Carolina. This means, of course, that the State for its own protection should so adjust salaries as to permit the securing and retention of trained and efficient workers. The penny-wise and pound-foolish policy has no place in a service which is so vital to the State as is its public health service. The setup in North Carolina for training personnel is as outstanding as has been the State's laboratory services.

To me as a native of North Carolina, who began his career in medicine and public health in the State, the history of the Health Department during the past thirty years in all branches of its service, particularly in the laboratory field, brings keen gratification, and I extend congratulations to the State, to its Board of Health, to Dr. Reynolds, Dr. Hamilton, and to all those who in the Laboratory and in the other divisions of the State Board of Health have shared in the glorious achievement.

DR. HAMILTON: Institutions as well as individuals are genuinely grateful to good neighbors and benefactors. We have distinguished representatives of various other institutions who are bringing greetings to us this day.

GREETINGS

DR. M. J. ROSENAU,
Division of Public Health,
University of North Carolina.

DR. W. C. DAVISON,
Dean, The Medical School of Duke
University

DR. WILLIAM DeB. MacNIDER,
Dean, The Medical School of the
University of North Carolina.

DR. E. S. KING,
Professor Preventive Medicine,
Wake Forest College

DR. HUBERT B. HAYWOOD,
President-Elect, Medical Society,
State of North Carolina.

MR. E. C. DERBY,
Resident Engineer-Inspector, Public
Works Administration.

DR. M. V. ZIEGLER,
Senior Surgeon, United States Public
Health Service, Washington, D. C.

DR. JOHN M. SAUNDERS,
Children's Bureau, Washington, D. C.

DR. ROSENAU: It is a joy to bring to this noble meeting the greetings of the Division of Public Health of the University of North Carolina, a double pleasure on account of the close relations which we are enjoying with this organization, so lately presided over by Dr. Carl V. Reynolds and his able staff. Now, in that cooperation we do the co-ing and they do the operating; we give, they receive. And it has been a great satisfaction to work under friendly conditions. We are both servants of the State and in that sense work together the best we know how. The only thought that I want to bring to this occasion is that I want to ask you to conceive, if you have the imagery, to picture what public health work today in North Carolina, or anywhere, would be without a Laboratory of this sort, without the service for diagnosing and controlling infections which this Laboratory gives to the administrative side of public health. What could we do with typhoid fever, pellagra, hookworm, in other words, without this service? We would revert to the dark and dirty ages of the medieval period and infection would again be rife and we would have a sad and sorry time of it. I think in that negative way we can glean somewhat of the important change which this Laboratory under the guidance of Dr. John H. Hamilton gives to our State of

North Carolina. In conclusion, I just will say that I have no doubt that when the poet wrote the following lines, he must have had men like Clarence A. Shore, Carl V. Reynolds and John H. Hamilton in mind, when he said:

"When earth's last picture is
painted ———."

DR. DAVISON: I wish not only to bring greetings from Duke University School of Medicine but also to congratulate the staff of the State Board of Health and the State of North Carolina on the acquisition of this splendid building and its equipment. The saving of lives and improvement of health can now go forward with even greater efficiency. And I wish also to pay a personal tribute to Dr. Shore, for whom this building was named. He, himself, would not have wished for a more fitting memorial. I have admired him for his accomplishments and also for his contribution on the subject of rabies. Years ago, I was trying to write a book on the diseases of children. Of course, we had to include a chapter on rabies. I took the liberty of sending it to Dr. Shore, with the request that he correct it, and the next week I got a very kindly note back, saying he could correct it, but wouldn't mind if he rewrote it. That was exactly what I hoped he would do. In the third edition through which that book has gone, that chapter is still the best in that book.

DR. MacNIDER: It is my happy privilege this morning to bring greetings on this occasion from Dr. Shore's Alma Mater, the University of North Carolina. He was a rather mature person and for those of us who were not mature he gave to us a certain poise and dignity. In speaking of Dr. Shore, we speak of the influence of the great teacher, Dr. H. V. Wilson. He was a person whom I am quite certain interested Dr. Shore not primarily in applying science, but primarily in gaining an understanding of the basis of science. My feeling is that it was this background primarily, his abstract research in biological problems, it was this type of understanding that gave him a foothold in scientific work in this place and at which time we now rejoice in dedicating this building.

DR. HAYWOOD: It is a signal

honor and a distinction to bring to you, as the authorized representative of the State Medical Society, greetings and congratulations on this Laboratory, which signifies a new epoch in an era of scientific medical progress in North Carolina.

This magnificent Laboratory is a symbol of the spirit of Modern Medicine. It is the heart and nerve center of our profession. Without its help we could do little, but with its aid we can do much. We ask the public of our State to share with us our gratification, for in the final analysis we visualize it and believe it to be the bulwark of their line of defense against devastating disease and the scourges which afflict us.

Wishful thinking, as you well know, does not create a great Laboratory. Dr. John Hamilton, the Director of this Laboratory, had the vision of a great institution, something more than a diagnostic Laboratory, something with a heart and soul, as well as a fine staff of unselfish workers, and fine equipment. He put his dreams into words and actions. He gave generously of his body's strength and his enthusiasm. No obstacle has been too great for his untiring and unremitting energy to overcome. There were many obstacles and barriers to be passed and this was victoriously done.

May I say of Dr. Carl Reynolds and his Board of Health that they have given Dr. Hamilton their full confidence and unqualified support. Dr. Reynolds' interested and careful planning and wise counsel have been of inestimable value. Their thoughts and dreams have become crystallized into an accomplished reality. A modern Laboratory!

I speak for our profession when I say that we are grateful to each and everyone of you for your interest and help.

To all the friends of the late Dr. Clarence A. Shore it seems fitting and appropriate that this Laboratory should be named the Clarence A. Shore Laboratory. Memory's lane has no turn which can make us forget our debt of gratitude to Dr. Clarence A. Shore for all that he did for the medical profession of North Carolina. Starting with inadequate funds and small equipment, he ever strove and brought to us and the public the best scientific laboratory aid. Every citizen and every physician in North Carolina were beneficiaries. Step by step and with

prodigious effort he created a Laboratory, whose work compared favorably with any in our country. Not forgetting his skillful helpers and their esprit de corps which he created and the State of North Carolina back of it, we called it Shore's Laboratory. Truly, he was a torch-bearer in medical progress in an era marked by wonderful medical discoveries. A victim of his own arduous labors for others, he was stricken at the height of his powers and intellectual ability. The Clarence A. Shore Laboratory will also be a medical Hall of Fame—a fitting Valhalla for a medical hero.

To you, Dr. Reynolds, Dr. Hamilton, your staff and your State Board of Health, we render homage and thanks. We believe that for you and your Laboratory, "The horizons in your fields for usefulness are limitless and that only your imaginations can create their borders."

MR. DERBY: I am sure I share a regret that you all feel that Mr. H. A. Wortham, Regional Director of the Public Works Administration, was unable to be here today, due to the moving of the Atlanta Office to Washington, March 1st, and the pressure of business incident to this move.

It is a very great pleasure for me, however, to be with you on this occasion, commemorating another advance in the Public Health facilities for the State of North Carolina.

Surveys which have been made show the appalling lack of medical facilities and public health facilities in both urban and rural communities, especially among those least able to pay. It is the responsibility of groups and individuals not to allow infection to exist that will spread sickness throughout a community. We all know that an ounce of prevention is worth a pound of cure.

But without leadership from the agent of final responsibility, that is, from the Federal Government, community initiative simply does not have the field to work in. Public Health officers and Sanitary engineers have long recognized the importance of a health program conducted with Federal aid.

Since 1933 the Public Works Administration has provided 35 per cent of the total increase in hospital facilities in the entire Nation. There have been 743 non-Federal hospital projects involving work on 2,046 buildings, with a capacity of 107,849

beds. The majority of these projects involved new buildings located in the smaller communities throughout the country where adequate facilities were made available for the first time.

A further contribution to the public welfare of the Nation, and the advancement of medical science, has been made by the aid of the Public Works Administration, through the construction of medical colleges and dental schools, where medical students and graduate doctors will receive more adequate training; also, medical buildings and clinics, dispensaries and research laboratories at many of the Nation's colleges and universities, have been provided with the aid of the Public Works Administration.

Not only must health be recognized as the foundation of contentment, of stability, of efficiency, but it must be positively worked for, with all responsible groups working together.

The facilities provided by this Hygiene Laboratory here in Raleigh will answer many needs of this community and the State of North Carolina, and it will save many lives. It may be true that without help from the Federal Government this construction might have been held in check for some time. But with the authorization by the Congress, the dream quickly became a reality. And the Public Works Administration is proud to have had a part in this worthwhile and enduring project.

I thank you all.

DR. KING: Mr. Chairman, Friends of Science, Co-Workers, Ladies and Gentlemen—I am happy to join with you and to have some part in this formal opening and dedicatory service of this new Laboratory building. I bring from the School of Medical Sciences of Wake Forest College most sincere greetings and congratulations.

This is a proud day for North Carolina, for it represents the successful completion of a project which has been near to our hearts and uppermost in our minds for many months. Everyone who has the welfare of his community at heart rejoices today at the opening of this beautiful building, with its modern appointments and attractive architecture.

This new Clarence A. Shore Memorial Laboratory building represents an ideal. In olden days costly structures were erected to commemorate

the deeds of some king or warrior, but we now erect buildings and dedicate them to the advancement of the arts of peace and for the upbuilding and healing of the people.

As you pass through this splendid building and note its ample and well-planned provisions for the comfort, health and convenience of those who will work within its walls, you have good reason to be proud of that ideal. And back of that ideal is the thought that has been the foundation of this great republic of ours, the secret of its permanence and power, as well as the prophecy of its future advancement, the aspiration toward kindness, helpfulness, health and justice.

Those who have labored so tirelessly and earnestly toward this project now see the result of their efforts. It is eminently fitting that such a result should crown the devotion and self-sacrifice of those who have given freely of their time, energy and means in its behalf.

The dedication of a Laboratory building such as this represents a consecration and a sacrifice, an offering on the altar of the noblest aims of civilized mankind.

This splendid Laboratory is a monument, not to public vanity, nor private gain, but for unselfish effort for humanity and science. Those who tracked the toilsome pathway, those who bore the heavy burden, may well be pardoned a feeling of exultation and a sense of triumph.

This Laboratory building is of economic importance to the State. When a man is saved from death or rescued from sickness, he returns to the support of a family which might otherwise be a public charge, and he becomes again an industrial unit, a factor in the production of wealth, a factor which adds its share to the power and greatness of the Commonwealth. From the economic view alone, to say nothing of the humane aspect, it actually pays to the community many financial benefits. The number of lives saved annually by its activities cannot be estimated, to say nothing of the great number of persons saved from invalidism because of early and accurate diagnosis, when otherwise they would have suffered permanent damage to health.

The major activities of a Laboratory and its staff may be summed up under the headings: Preventive medicine, laboratory diagnosis of disease, manufacture of products for biologi-

cal therapy, teaching and research.

The most important development in the study of public health problems is the emphasis that is now being placed on the possibilities of disease prevention. This is one of the important functions of the laboratory and health-promoting organizations.

The next great activity is the diagnosis or recognition of disease-producing agents. This function is shared by two groups, first, the attending physician, who studies the history, signs and symptoms, and the laboratory man, who examines various specimens to diagnose and classify the disease. No physician can satisfactorily practice medicine without the services of a good laboratory.

The activity of the manufacture of various biological products is a very important one, for with these products disease is prevented or cured and health restored.

Another important activity of the modern laboratory is the problem of research. This may be of two types, first, bedside research and laboratory research, or a correlation of the two. Every case of illness deserves careful study, no matter how much has already been learned about it in the past. A series of facts must be recorded continuously in order that definite scientific inferences may be drawn from them. The purpose of all this study is to provide the physician with a set of accurate data which will enable him to be of greater benefit to the next sufferer in line. Laboratories, as an aid to clinical research, include studies that are made in the fundamental sciences of medicine, such as bacteriology, serology, pathology, physics, chemistry and biology. The history of the science of medicine has a number of brilliant pages to its credit, pages which could never have been written had it not been for the investigative mind of the research worker. We are the keepers of our brother's body, his health, his happiness, his children, and his chance to develop and to work out his destiny. It is this altruistic spirit which controls our profession.

There are givers to society no less than to individuals. Among those are the men and women who have made possible the construction and maintenance of modern hospitals and laboratories. In these institutions are epitomized the spirit of good-will and human devotion to the welfare of fellow-creatures in need of help.

Their very existence is made possible by gifts that come from the heart, investments in human resources for the benefit of their community. No man or woman pours out from his heart a fuller measure of devotion to the better things in life than those who by their gifts make possible the development and maintenance of modern hospitals and laboratories.

Finally, may this Laboratory continue to hold its high place of usefulness in the alleviation of human misery, in the relief of pain and suffering and to a successful battle with disease and death.

DR. ZIEGLER: When bacteriological techniques and procedures were found to be useful for the diagnosis of communicable diseases, the public health diagnostic laboratory became an essential part of the State public health organization. In this field, as in other public health developments, it was the private agency, such as scientific institutes, universities and commercial laboratories, that demonstrated the value of laboratory work. When the laboratory service was shown to be a benefit to the individual and to the public at large, it was placed on a governmental basis.

In 1890, Minnesota established a smallpox laboratory; in 1894, Rhode Island established a diagnostic laboratory, and Massachusetts engaged in the manufacture of antitoxin for diphtheria. Other States followed in making provisions for laboratory work, including the distribution of biologics for the prevention and treatment of disease. The State recognized that to prevent children from dying from diphtheria is a responsibility of government. Every State Health Department has made provision for laboratory service.

The laboratory was established primarily for diagnosis of communicable diseases, and this work continues to be the major purpose and function of the laboratory today. The scope of activities has increased with the expansion and application of public health measures, which in turn has made it necessary to include special laboratory services in various fields, the more recent being in connection with cancer control, industrial hygiene and pneumonia control.

Health officials, Federal, State and local, recognize that the well-organized laboratory is one of the foundations of effective health work and is

an invaluable means of coordinating health activities. A laboratory that is adequately staffed and equipped is in a position to render an important and essential service to society. Public health laboratory services have played an important role in the extension and expansion of practical and efficient public health measures. The laboratory is the crucible in which the public health programs are assayed. The laboratory gives guidance and direction to the health officers' programs. The several laboratory aids are the bell-buoys which mark the course and channel through which the health administrator pilots the public health ship.

There is a definite trend towards uniform methods of procedure and reporting practices by the various public health laboratories throughout the United States. Laboratory directors are convinced that research work is desirable, as it keeps alive the investigative spirit in laboratory personnel. They are agreed that pure research should not be undertaken without adequate funds and well-trained workers.

This Laboratory has carried on some original studies in research of antirabic vaccine. The more recent research activities have been in matters pertaining to the improvement of existing techniques, new laboratory methods and the development of devices, instruments and appliances, with a view to performing more efficient and prompt service. This Laboratory manufactures biological products for the diagnosis, prevention and treatment of certain diseases and makes provision for the distribution of commercial biological products that are of proven value.

In addition to the service that the Laboratory renders to the health officers, epidemiologists and health workers, it renders a direct service to the physician for the benefit of the citizenship of the State. The Laboratory is a direct link between the Health Department and the public and can make or break the reputation of the whole organization. The extent to which the physicians use the State Laboratory is dependent upon their attitude towards the Laboratory. The attitude of the North Carolina physicians towards the Laboratory has always been friendly and cooperative. This confidence is due to the accuracy and reliability of the

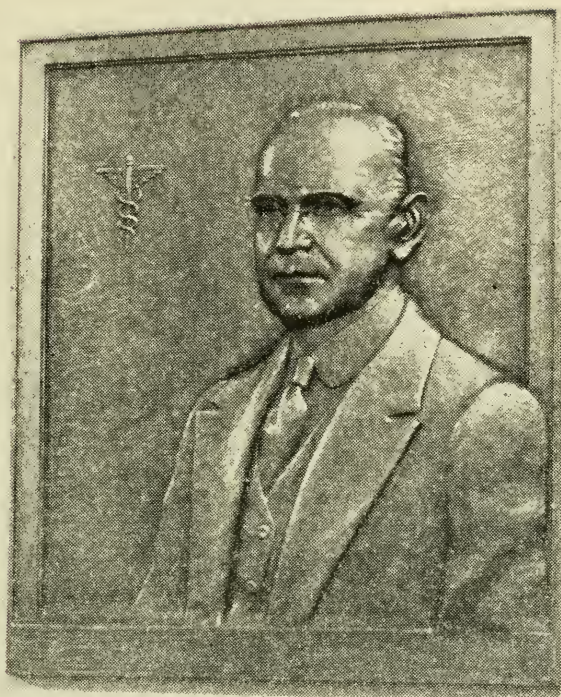
laboratory reports and the promptness and efficiency of the service. There is no reward that warms the cockles of the hearts of the laboratory workers so much as an expression of praise from the physician and clinician as to the promptness and efficiency of the service, and the accuracy and dependability of the laboratory reports. I trust that all those who will have the privilege of working in this Laboratory and serving mankind will continue to cherish this confidence, and that they will always zealously guard the earned reward of praise for efficient and meritorious service.

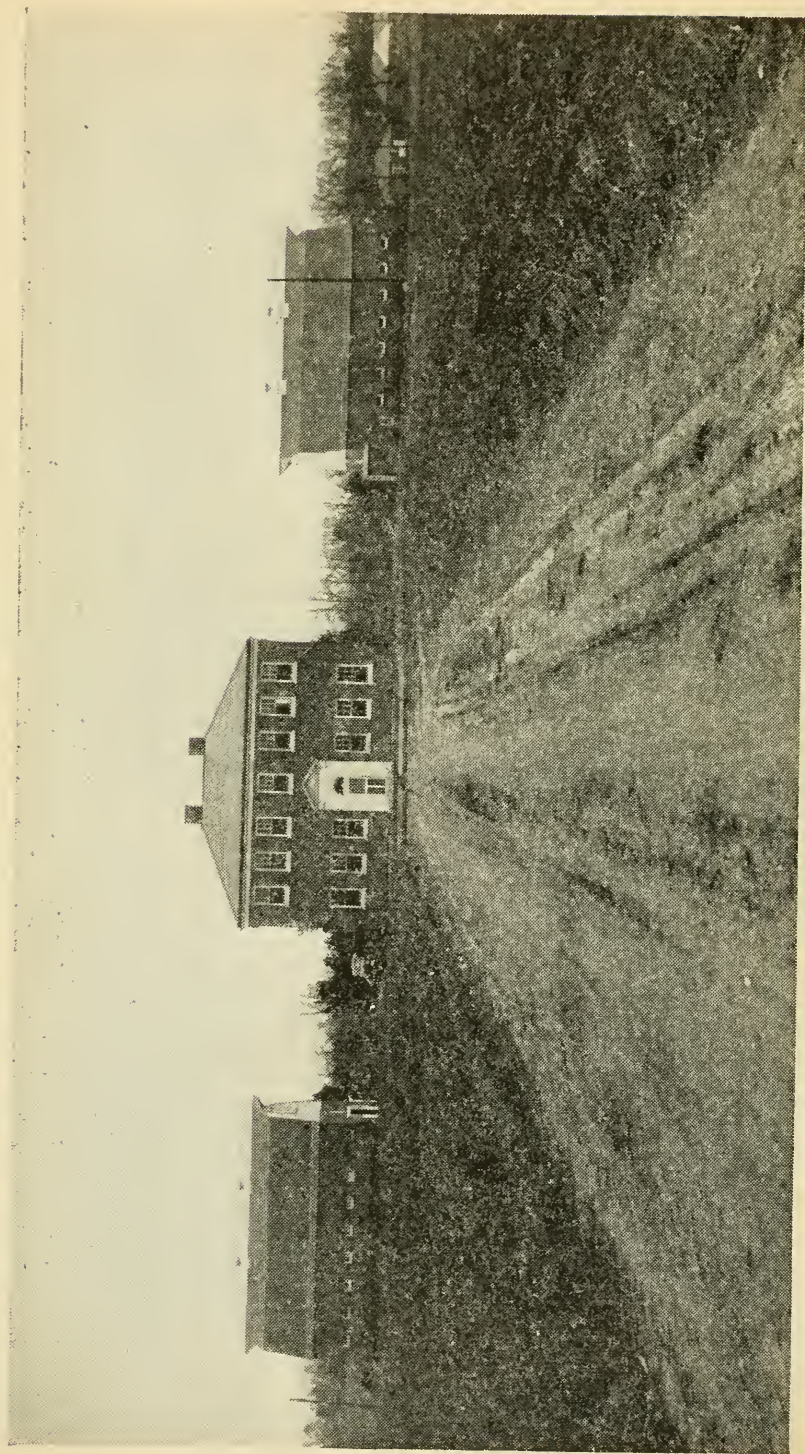
In the construction of this building you have solved one of the two needs that are common to most State Laboratories, namely, the provision of adequate housing, laboratory space and facilities. The other need which still confronts you is that of an additional staff of trained personnel which is required to perform the ever-increasing volume of work of the Laboratory.

I am pleased to share with you the joy that comes with the successful completion of this Laboratory building. It represents another milestone in North Carolina's public health progress.

I wish to pay tribute to Dr. Reynolds for bringing to a successful conclusion the project, and especially Dr. Hamilton, who more than anyone else conceived and followed through the project, for his tireless efforts in the face of many reverses. It was his fortitude and determination that made this achievement possible.

DR. SAUNDERS: I am glad to bring greetings from the United States Children's Bureau. As you know, the Children's Bureau cooperates with the North Carolina State Board of Health in its maternal and child health program and the program for crippled children. The strengthening of related services such as the laboratory service directly or indirectly strengthens services to mothers and children. It is a pleasure to convey the good wishes and congratulations of the Children's Bureau to the North Carolina State Board of Health on acquiring this splendid State Laboratory.





STATE LABORATORY OF HYGIENE FARM



The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

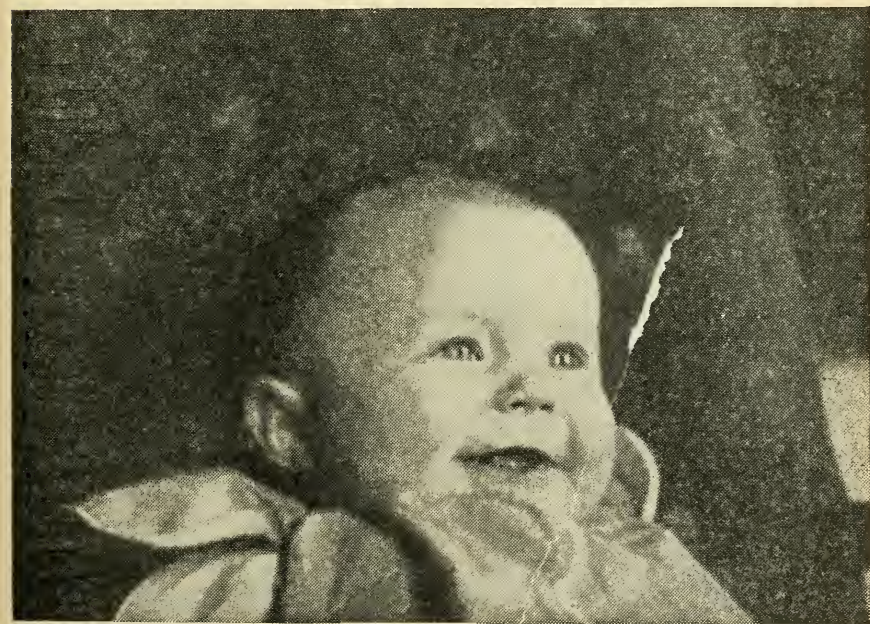
This Bulletin will be sent free to any citizen of the State upon request

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Just Like A Rose

Above is a picture of Jack Carroll, son of Mr. and Mrs. M. K. Berkut, of Raleigh, N. C. Carroll, though four months old, weighs seventeen pounds, is full of life and in perfect health. He is another child whose parents have applied the doctrines of proper infant care as advocated by the Board of Health.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
 Appendicitis
 Cancer
 Constipation
 Chickenpox
 Diabetes
 Diphtheria
 Don't Spit Placards
 Eyes
 Flies
 Fly Placards

German Measles
 Health Education
 Hookworm Disease
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 Malaria
 Measles
 Pellagra
 Residential Sewage
 Disposal Plants
 Sanitary Privies

Scarlet Fever
 Smallpox
 Teeth
 Tuberculosis
 Tuberculosis Placards
 Typhoid Fever
 Typhoid Placards
 Venereal Diseases
 Vitamins
 Water Supplies
 Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care
 Prenatal Letters (series of nine monthly letters)
 The Expectant Mother
 Breast Feeding
 Infant Care. The Prevention of Infantile Diarrhea.
 Table of Heights and Weights

Baby's Daily Time Cards: Under 5 months; 5 to 6 months; 7, 8, and 9 months; 10, 11, and 12 months; 1 year to 19 months; 19 months to 2 years.
 Diet List: 9 to 12 months; 12 to 15 months; 15 to 24 months; 2 to 3 years; 3 to 6 years.
 Instructions for North Carolina Midwives.

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Notes and Comment

By THE EDITOR

IN this month's issue, we are presenting the annual tables giving the comparative infant and maternal death rates by counties in North Carolina and by States in the Union for the year 1938. We regret the delay in publication of these figures, but it has been impossible to get the tabulations, especially of the national figures, any earlier.

It hurts us to publish these figures, because North Carolina had an unusually high infant death rate in that year compared to other States. The year 1939 shows a much better record, but owing to the severity of the winter, presence of more epidemic disease conditions, and other causes, the State is off to a bad start in this respect for January and February of this year.

These figures should be studied by every individual interested in the public health work, and that should include every good citizen of the State.

* * * *

As this material is being prepared for the printer, the Editor is in receipt of two communications from widely separated points in the State simply giving examples of the difficulties and hazards which must be overcome before the infant and maternal death rate in North Carolina can be reduced to a point which will compare favorably with all other States in the Union.

The first item we quote from Dr. John W. Williams, recently elected

Health Officer of Martin County, as follows:

"A local physician was called in the country to a fifteen year old unmarried Negro girl. He found her having eclamptic fits due to pregnancy. She was carried to a hospital, labor was induced, a live baby was born and the girl died. Ways to view it:

"Materialism—That Negro girl was trying to carry an illegitimate baby to birth. Her kidneys could not take care of the extra burden, so she died.

"1. The county has the expense of transportation, hospitalization, physician's fee (perhaps) and burial, besides the tax of keeping a health department to prevent this type of case.

"2. There will be a Negro orphan-baby to starve or exist—without even an ignorant Negro mother's care.

"3. The county and State have one more unit to add to their maternal-mortality percentage.

"4. A farmhand capable of producing a crop of beans, as well as babies, died in her best productive age for each.

"Christianity—But would it not be best to look at it from just the humane side—forgetting color, intellect or creed, and say—'It's a damnable shame on all of us that someone of us did not help her to one of our weekly prenatal clinics and save her?'"

* * * *

The other item comes from Dr. M. P. Whichard, District Health Officer for Cherokee-Clay-Graham Counties. Dr. Whichard reports the loss in his district during the last few days of March of two mothers, who died from causes incident to pregnancy. One

of the mothers died as a result of hemorrhage in labor—bled to death. The other died from eclamptic convulsions. Both of these women had to depend upon midwives throughout the whole pregnancy and when labor came.

Dr. Whichard closes his letter with the following statement: "These things, of course, should not happen, but with the amount of poverty and the lack of physicians in this mountainous section, what are we going to do about it?"

In Martin County, as noted by Dr. Williams and his item, we have been endeavoring for two or three years to establish prenatal and well-baby centers within the reach of every indigent expectant mother or baby in that county not under the direct care of a physician. Owing to transportation difficulties, lack of physicians available for the service, lack of a sufficient number of public health nurses and other difficulties, no prenatal and well-baby centers have been established in the Cherokee-Clay-Graham district, except what could be carried out by the district health officer and the one public health nurse in each county under his direction. This is, of course, very limited and confined only to advice that may be rendered at the office when such women may be able to find the health officer or the nurse in the office for such a consultation.

* * * *

Humbugs—Series Continued

Although we have published quite a number of items in *The Health Bulletin*, running back for fifteen years, warning the people in this State to beware of traveling fakers who visit the homes of people, especially in the suburbs of the cities and towns, but generally in the remote country districts, introducing themselves as "specialists" of one

kind or another, all of them of course claiming to be "doctors," yet people continue to yield to the hypnotic influence of such fakers.

The most recent illustration along this line comes from a county way up in the northwest section of the State, far out on a rural route, high up in the mountains. We quote from the letter, without, of course, indicating even the county or the writer's identity. It is sufficient to state that the letter was directed to the State Board of Health and just recently received. We quote:

"A man who said he was 'Dr.' W. M. Williams, sent out by the State of North Carolina at a salary of \$300.00 a month, was at our home yesterday and sold my father medicine to cure prostate gland trouble at an unreasonably high price, we thought, the money to be refunded if the treatment was not satisfactory, when he returns again. He promised to return about the first of March to collect the remainder of the money which could not all be paid at first. The medicine cost \$27.50. He also sold various kinds of stuff to others in our community. He said his 'office' was in Raleigh and his home address in Durham, at 224 Spring Street. He claimed to have done work in Baltimore hospitals, Kentucky and Florida, and claimed to be a graduate of Duke University. He instructed us to call him at his home, 224 Spring Street, Durham, if our father grew worse, and he would come back to see him.

"I would appreciate it very much if you could let us know whether or not he was telling the truth, and if he is a 'doctor' sent out by the State Board of Health, as he claimed to be."

Now, comment on this situation may be very brief. First, of course, Duke University never heard of such a fellow. Second, there is no such address in Durham as 224 Spring Street. That is one of the favorite devices of these fakers. They frequently give the address as having a so-called office or home on a well-known street in some one of the

larger cities or towns of the State. They always, however, give a fictitious address on such a street. For example, one of the favorite devices of a pair who worked the State pretty thoroughly without ever being caught a few years ago was to give the address of their office on the block where the City Auditorium of Raleigh now stands. This is very easy. Some folks may know that there is such a street in such a town and think, well, the faker is telling the truth, not knowing that the street ends before such number or that such number may be the railroad station or Post Office or some such place. A few times we have had the police station given as the address of these fakers.

If we could only procure a photograph and an exact description of such contemptible rogues and procure the aid of local officers, including Sheriffs and police departments, and of their victims, it would be possible to apprehend some of them and send them to the penitentiary, provided we could find a Judge and a District Solicitor who would follow through. Unless we get the cooperation of the people in the sections of the State where such fakers find the pastures good, it is not likely that any of them will suffer.

This so-called "Dr." W. M. Williams, of course, moved over the line to Tennessee and over there he probably became Dr. J. W. Jones and had graduated at the University of Virginia, and of course had all the answers for all the ailments that all the people might have, provided they had from \$5.00 up to pay for it.

There is nothing further that we can do about such things until the intelligent people of this State rally to our standards and help us exterminate them.

* * * *

One of the most interesting features in this issue is the informative article by Mrs. Wilbur H. Currie, Chairman of the Moore County Maternal Welfare Committee. Mrs. Currie modestly calls attention to the fact of how pleased and thrilled their committee was on the close of the last year's work to know that there had been no maternal death in that county since August, 1938. This is a record that did not just work itself out by accident. In a county that had consistently had a rather high rate and in which some forty midwives, about half of whom had managed to do some work without any instruction or permit from the health department, naturally made for a higher rate than they ought to have had. With the control of the midwives, the elimination of those who were incompetent, and with the expert year-round service of a competent nurse-midwife, they have achieved a record which merits commendation from all quarters.

It detracts nothing from the great record of Mrs. Currie and her committee to state plainly that their success would have been impossible without the sustained efforts of the Moore County Health Department. They have carried through the period the burden of details connected with the satisfactory conduct of the clinics, the professional home-visiting and performed many other duties. Without the State and Federal financial aid, which affords a sufficient nurse force and the sympathetic aid in other ways of the State Board of Health, the story could not have been so completely satisfying. Mrs. Currie, of course, makes repeated references to the satisfactory cooperation of all forces. After all, the highlight in Mrs. Currie's story is her proof of what can be accomplished in any county when all forces

work together as they have done under Mrs. Currie's masterful leadership.

It is gratifying to us to be able to record that in 1939 the maternal death rate reached its lowest point in the history of vital statistics in North Carolina. There are always a few counties that have no maternal deaths, but not many of them. We do not have the tabulations for 1939

on this point. It will be about August before we have available the records for 1939 of all such counties. We hope that there will be more of them than ever before, but naturally our primary concern now is for the record for 1940. All of us earnestly hope that the 1940 record will be even better than the 1939, but if so, a lot of hard work has got to be done in a great many places in the State.

Moore County's Maternal Welfare Committee

By MRS. WILBUR H. CURRIE, Chairman, Carthage

NEW YEAR'S DAY, 1940, had come at last. What news would it bring of the past year's record in maternity deaths in Moore County? Since September 1, 1936, maternity clinics had been held every month in six sections of the county. Since February, 1937, a special nurse-midwife had worked with the Health Department to fight for mothers' lives—eight of whom had died in 1935. As the years passed, the number of deaths had steadily declined—1936, four deaths; 1937, four deaths; 1938, three deaths, and now, 1939 was passed, what was the news?

I took the receiver down and called the Health Department. The same old question asked many times during the year, "Have we lost any mothers lately?"

Then, Mrs. Edith Harris, our nurse-midwife, answered in a cautious voice, "No, not that I know of. Why, have you heard of any?"

"No, I just wanted to be sure. That means no mother died in the county last year, doesn't it?"

Her voice became surer, more vibrant with joy, "It certainly does!"

As I replaced the receiver, a prayer of thanksgiving passed my lips as I remembered Miss Margaret McQueen's observation when I had

said a few months before that I did hope we could finish the year without a death. She said, "It is certainly an end to be devoutly hoped for." So we, who have worked four years on the Maternal Welfare Committee since its organization in February, 1936, are humbly aware that our success has not been due to chance or entirely to the brilliant work of our doctors, surgeons and nurses, but to the fact that these have been blessed in their unselfish consecration to saving the lives of the poor, as well as those able to pay for their services.

There are thirty-three members of the Moore County Maternal Welfare Committee and they represent every section of the county, from Hemp, near the Randolph and Montgomery County line, to Aberdeen, near the Richmond and Hoke County line, to Cameron, joining Lee on the east, and West End, near Richmond County.

The Woman's Club in Hemp, organized two years ago, took over the prenatal clinic work from the Parent-Teachers' Association, under whose auspices it was begun in 1936. Mrs. W. P. Saunders, as civic leader from Hemp, has steered the Clinic Committee, with Mrs. E. A. West, who was chairman for three years. After

being held in the school building during the sponsorship of the Parent-Teachers' Association, the clinic is now held in the town hall, under the Woman's Club Committee. Their territory extends nine miles to Jugtown, and then to Spies, near the Montgomery County line, necessitating many miles of travel over unpaved roads to corner school-houses and by-roads, where mothers from tiny homes back in the woods stand patiently awaiting them. Postcards from the health office have reminded them of the date for the monthly clinic, and they come "without money and without price" to receive an excellent examination by health nurses and Dr. J. F. Davis or Dr. W. M. McDuffie.

The first Thursday has been a busy day for Mrs. Ethel Davis, of West End, herself the mother of three children, for the past two years since she took the chairmanship of the prenatal clinic from the capable hands of Mrs. M. C. McDonald, its first chairman. Sponsored by the West End Book Club, this clinic has grown in number of patients from three or five at first, to a high of twenty during the summer of 1939. Some of these patients are transported through the courtesy of the Woman's Club of Eagle Springs, six miles away. Mrs. G. W. Maurice, as civic leader, and Mrs. Jessie Page, as clinic chairman, worked unceasingly for four years in finding, reporting and transporting the mothers in their section of the county. Dr. J. W. Wilcox, their only physician, has rendered a most outstanding service in holding this clinic so faithfully, month after month.

Lying northeast of Hemp is a little post-office on the Norfolk Southern Railroad, known as Glendon. For miles around, there has been no physician practicing obstetrics for a

number of years. Riding through on the highways toward Siler City, in Chatham County, one sees only an occasional house to break the monotony of the deep forests on both sides of the road. Yet, the public school in High Falls, a few miles to the left, boasts an enrollment of over three hundred pupils. Patient searching by the health nurse, Miss Margaret McQueen, has revealed the homes from which they came and whence due to her thorough work, have come a large number of clinic patients. Indeed, so many came that the Carthage clinic, ten miles away, became so crowded that a new clinic was organized at High Falls two years ago, then moved last spring to Glendon. Here, Miss Candice Street, the daughter of the venerable Dr. W. E. Street, has thrown her heart into the task of reaching these mothers, that there shall be no more deaths in this section, where our only death in two years occurred in August of 1938. This mother, a bride of a year, was not a clinic patient, due to her own choice. This clinic is held by Dr. Davis, of Hemp, or Dr. Grier, of Carthage.

The clinic in Cameron is conducted at the present time by the nurse-midwife and Miss Vista Markham, our other county nurse, with the health officer, Dr. Symington, as physician, since there is now no doctor in Cameron. For two years, while Dr. C. N. Ekerson resided in Cameron, the clinic was held under the auspices of the Woman's Club. Mrs. J. M. Guthrie was civic leader and Mrs. George McDermott, then Mrs. J. E. Snow, was chairman. The clinic is now made up entirely of Negro mothers and is held in the colored school. The white mothers are cared for through the visits of the nurses and an occasional visit to the Vass clinic where necessary.

The law governing midwives in Moore County requires that they shall not deliver any patient who has not been examined by a physician or attended a prenatal clinic, assuring a normal delivery. This obstruction to their practice has bothered more than one of our midwives, who, often practice in neighboring counties as well as our own. One typical example was the announcement by one of the midwives to Mrs. Harris, "I took this patient to see de health officer in— County, and I said to him, 'How come we can't have us a clinic down in this county to look after my patients like they does in Moore?'" We hope her wish will soon come true.

The Parent-Teachers' Association in Carthage has sponsored the prenatal clinic since its beginning under their health chairman, who was Mrs. Alonzo Blue, for three years, and last year Mrs. Blair Beasley. The clinic rooms are in vacant rooms over the stores. First, Mrs. J. K. Roberts gave the rooms, rent free, and for the past two years another suite of three rooms has been generously given by Mr. Ben Hurwitz. Until the formation of the Glendon clinic last summer, the members of the Clinic Committee and the Hospital Auxiliary Motor Corps in Carthage often traveled forty miles in an afternoon to bring patients in. This mileage was donated by the car owners. From six to eight patients, the clinic grew to twenty-seven last year. Now around fourteen to eighteen attend. The three local doctors, Charles T. Grier, Alex Blue and R. L. Felton, rotate in holding the clinic, and they have been most gracious in dropping their office practice on those afternoons.

In Vass, a different situation exists which leaves very little for the local Woman's Club, who sponsored the beginning of the work under Mrs.

H. A. Borst, as chairman. Here, they are blessed with a physician of the old school, to whom every resident is a potential patient to be fathered and visited occasionally, whether he or she can pay or not. Dr. Rosser possesses the confidence of all the people, both locally and for miles around, and since he is their only physician, he holds the clinic in his own office. The nurse-midwife assists, bringing in the patients from Clay Road Farm, four miles away, on her way in from Carthage. The Welfare Department of the Woman's Club, under Mrs. M. M. Chappell as chairman, has assisted in various showers for patients and in reporting patients.

The Moore County Hospital opened its doors to the Maternal Welfare Committee in May, 1937, and the clinic, sponsored by the Walter Hines Page Book Club, of Aberdeen, under the chairmanship of Mrs. Edwin McKeithen and Mrs. J. Talbot Johnson, as civic leader, formerly held in the club room, was moved to the hospital. This clinic has always served a number of towns, in each of which a committee member has assisted in transportation and reporting patients.

In Southern Pines, Mrs. James Boyd, vice-chairman of the county committee, Mrs. James Swett and Mrs. Alice Burt Hunt have served as civic leaders. Mrs. Hugh Betterly has been an excellent chairman all four years.

In Pinehurst, the work sponsored at first by the Parent-Teachers' Association, has progressed nicely from the beginning under Mrs. P. H. Thompson's capable leadership. Mrs. Paul Dana, President of the Hospital Auxiliary, and Dr. Clement Monroe and other officials of the hospital, have assisted the committee in numerous ways by their enthusiastic co-

operation. The doctors holding this clinic in rotation have been: Dr. H. E. Bowman and Dr. S. P. Bowen, of Aberdeen; Dr. F. L. Owens, of Pinehurst, and Dr. W. C. Mudgett and Dr. Grier Stutts, of Southern Pines. Dr. Stutts is obstetrical consultant on the hospital staff and delivers most of the cases referred there by clinic doctors all over the county. Last year twenty-six clinic mothers were hospitalized. Dr. Owens has further assisted the committee in holding a free clinic, in his office, for sick babies on every Monday morning.

The work of the Pinebluff Committee on Maternal Welfare has been remarkable in a number of ways. Foremost, is the fact that the small group of Christian women who formed the Pinebluff Missionary Society of the Emmanuel Episcopal Church of Southern Pines, did not let the fact that there were no expectant mothers in Pinebluff proper thwart their desire to help with the maternal welfare program of the county. Taking under their wings the little colored village of Addor, three miles away, they have brought health and happiness, not only to numbers of mothers whom they transported monthly to the Pinehurst prenatal clinic, but also to dozens of children, through their splendid well-baby clinic for the past two years. Mrs. Walter MacNielle, their wonderful chairman, saw the need for layettes and bassinets among the Pinehurst clinic patients, and in response to this need, turned her sun-porch into a sewing-room, where every Friday afternoon they have gathered to work. During four years this little group furnished around a hundred and fifty bassinets to needy mothers all over the county. So numerous have been their activities that another article will have to be written to cover them.

Even though it will require another

article, which the Editor of *The Health Bulletin* kindly promises to publish, describing in detail the inspiring work of the Pinebluff committee, the financial report made by Mrs. MacNielle and Mrs. MacMinn for the year 1939 is included right here. It tells a big story in few words.

Cash on hand January 1, 1939.....	\$	207.21	
Receipts:			
Donations.....	\$	128.40	
Golden Rule Shop:			
Gross Receipts.....	\$	623.60	
Less Expenses.....		49.93	573.67
Furnace Sales:			
Gross Commissions.....	\$	20.00	
Less 75% to Hemp Committee.....		15.00	5.00
Candy Sales.....		175.00	
Miscellaneous.....		5.24	887.31
			<u>\$1,094.52</u>

Expenditures:			
Food and Milk.....	\$	212.24	
Clothes and Shoes.....		26.11	
Medicine.....		35.22	
Doctors and Midwives.....		33.00	
Veneral Clinic Transportation.....		55.05	
Addor Clinic.....		44.01	
Sewing Supplies:			
Gross Expense.....	\$	140.92	
Bassinets Sold at Cost.....		82.12	58.80
Service Expense:			
Postage, Telephone, etc....	\$	41.68	
Mileage.....		111.30	152.98
Alterations and Repairs to Shop.....	\$	210.00	
Balance due.....		40.00	170.00
			<u>787.41</u>

Cash on hand December 31, 1939:			
Bank Account.....	\$	292.11	
Reserve.....		50.00	
Cash for Current Use.....	\$	242.11	
Reserve.....		50.00	
Treasurers' Petty Cash.....		10.00	
Shop Petty Cash.....		5.00	\$ 307.11

This is the picture of the combined efforts which the women, nurses and doctors have put forth to rid Moore County of its curse of a maternal death rate which climbed to 16.9 per 1,000 births in 1935, when 8 mothers died for the 448 babies born. The false economy which dictated the policy of the Board of County Commissioners in dismissing the maternity nurse employed for two years, 1929-1931, was brought to their attention

so forcibly by these facts presented to them by a committee of women civic leaders at their meeting in April, 1936, that they immediately voted to appropriate the \$900.00 in the health budget for each of the next two years to insure Moore County's participation in North Carolina's portion of the Federal funds made through the Social Security Act for the placing of maternity nurses.

The work of Miss Margaret McQueen began in July, 1936. Upon her devolved the strenuous task of establishing the six maternity clinics in various points in the county. To her untiring efforts in winning the confidence of the people in this new idea, is due the fine foundation upon which the work of the Maternal Welfare Committee, through the County Board of Health, has been built.

"A new phase of the work was begun in July, 1939, through the assistance and cooperation of the Adult Education group, of which Mrs. J. Lloyd McGraw is Director. Using the clinic mothers as class groups, two adult teachers have attended each clinic all over the county and taught the mothers to cut and make baby garments. In addition they have given helpful instruction along other lines. The goods and patterns for these garments have been furnished by the maternity fund of the committee. One garment is given at each clinic to every patient willing to make it. It is surprising how many of these mothers-to-be have to be taught the first principles of sewing, and a joy to see their eagerness to learn and their appreciation of the opportunity to make clothes for their babies. Mrs. McGraw's report for the six months last year shows attendance at five different clinics each month and the following work: 194 lessons in prenatal and postnatal care; 199 parent education lessons;

and 37 kimonos, 83 dresses and 64 patterns given to needy mothers.

The most recent change in the work is in the assistance given the committee by the N. Y. A. sewing-room. The central location of this room in Carthage, where the Health Department office is, made it seem advisable, as well as fairer to the ladies on the Pinebluff committee, who have given so wonderfully of their time and money in furnishing bassinets for all the county for three years, to have this work done here. The materials are now, since January 1, 1940, furnished by the county maternity fund; the sewing is done by the N. Y. A. girls under their leader, Mrs. Eliza McDonald, under the supervision of Mrs. Alex Blue, a member of the County Maternal Welfare Committee. This is in addition to the work of the Adult Education leaders at the clinics. The fully-equipped bassinet and layette, priced \$5.00, are placed by the midwife-nurse where they are most needed. Often they are fully paid for by the patient, sometimes only part of the articles are needed, and all may be given free of cost to mothers unable to pay.

A few statistics on the clinic may be of interest. In 1939 there were 90 clinics held, 278 new patients, of whom 79 were white, attended; 293 successful deliveries, 98 by doctors, 195 by midwives, were reported; there were 26 deliveries made in the Moore County hospital, and there were no deaths of mothers during the entire year, neither clinic patients or others."

The months passed and no deaths were added after July 1st to the record of 4 already for 1936. The perfect record lasted until April 1st, then, in three months, 3 mothers died, and 1937's record bid fare to pass that of the year before. The Maternal Welfare Committee felt that

while the clinics were good, they alone could not cope with emergencies arising immediately before and after birth, and that closer supervision of patients at the time of delivery was necessary. Another survey revealed 42 midwives practicing in the county, while only 17 were licensed for that year. Clearly it would seem a nurse-midwife was the answer to our dilemma. Again the Commissioners were approached by the earnest ladies on this committee. Again every part of the county was represented. The gentlemen listened attentively as they introduced this new request for a grant of \$1,800.00 a year for two years to be used by the committee in the furtherance of maternal welfare through the services of a nurse-midwife. They granted this appropriation.

There was no nurse-midwife graduate available at the Lobenstine School of Midwifery in New York, so our next step was a long search for a nurse qualified by training and experience to enter the school for training. Our search ended at last in the finding of Mrs. Edith Harris, who was endorsed by the State Board of Health. Imagine the consternation

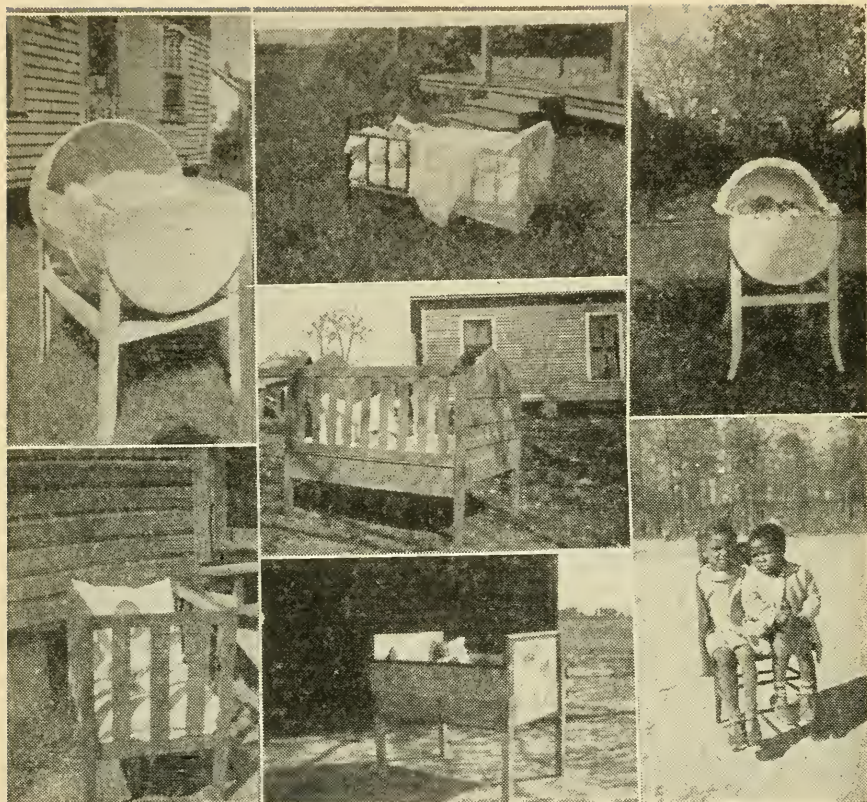
of the committee then to discover that the Rockefeller Foundation Scholarship, which we had understood was available, could not be given to a North Carolina nurse that year due to technical reasons. What could be done before such a stone wall? The only alternative was for us to pay her expenses for the six months' course. Would the Commissioners allow us to use part of their appropriation this way? To our great joy, they consented, thus making it possible for Moore County to have a nurse-midwife to begin her work in February, 1938.

Has their trust in the committee's judgment been betrayed? We think not, when one considers that there has been only 1 death of a mother for more than 1,000 births since she began work and none among the 456 clinic patients in those two years. We believe there is less suffering among mothers, healthier babies being brought into the world and a deeper appreciation of the benefits of proper prenatal and obstetrical care among all the mothers of Moore County, due to the work of the Maternal Welfare Committee during the past four years.



ORCHIDS TO CHAPEL HILL JUNIOR SERVICE LEAGUE

The above pictures show a group of mothers and babies and the clinic staff at the first session of a new Negro well-baby clinic being sponsored by the Chapel Hill Junior Service League. The League provides all the funds, furnishes transportation where needed and members assist in the clinic. The Negro clinic and another for white babies will meet monthly.



In the Union County Maternity Clinics expectant mothers are taught the value of providing a bed for the coming baby. It has been proven that, regardless of income, comfortable and adequate beds can be made at little cost. Babies that sleep alone are healthier, because they get better air, are easier to train, and they rest more comfortably. The above pictures are of baby beds made from materials on hand or of materials bought at reasonable prices.

Center picture.—Crib made from a discarded bed. Father cut it down to crib size and enameled it a light blue color.

Lower center picture.—Crib made from wooden box. Only cash expenditure was for nails. Auger holes were bored in bottom to provide ventilation.

Top pictures on left and right.—Beds are made of flour barrels having metal hoops. The base is an oil stove frame. Auger holes also are used in this type bed, cost—enamel and nails. Lining the bed is not advisable, since it is easily soiled.

Top center picture.—Stored cradle from which rockers were removed, cost—mosquito netting (advisable for each bed).

Lower left picture.—This bed is easily constructed.

Lower right picture.—Sent by Mrs. Marion MacNeille, of Pinebluff. It clearly illustrates the practical value of prenatal and well-baby clinic service for the poor. The child on the reader's left was born before such service was available to the mother. Before the birth of the other one, the mother attended regularly the center conducted by the County Health Department according to the State Board of Health plan, and after the birth of the baby she continued to bring the baby back for regular monthly advice from the nurses and physicians in charge. It does not require a microscope to see the difference in the physical condition of the two children. Mrs. MacNeille and her neighbors are carrying on a wonderfully fine service for the people in the Pinebluff vicinity.

LIVE BIRTHS, INFANT MORTALITY AND MATERNAL MORTALITY UNITED STATES, 1938

STATE	LIVE BIRTHS		INFANT MORTALITY (Deaths in the First Year of Life)		MATERNAL MORTALITY (Deaths Assigned to Pregnancy and Childbirth)	
	Number	Rate Per 1,000 Population*	Number	Rate Per 1,000 Live Births	Number	Rate Per 1,000 Live Births
United States.....	2,286,962	17.6	116,702	51.0	9,953	4.4
Alabama.....	62,032	21.4	3,772	60.8	419	6.8
Arizona.....	10,878	26.4	1,075	98.8	52	4.8
Arkansas.....	37,182	18.2	1,912	51.4	204	5.5
California.....	101,844	16.5	4,450	43.7	335	3.3
Colorado.....	20,599	19.2	1,240	60.2	92	4.5
Connecticut.....	23,783	13.7	864	36.3	61	2.6
Delaware.....	4,431	17.0	234	52.8	25	5.6
District of Columbia.....	12,938	20.6	622	48.1	72	5.6
Florida.....	31,096	18.6	1,802	57.9	234	7.5
Georgia.....	64,636	21.0	4,376	67.7	434	6.7
Idaho.....	11,277	22.9	503	44.6	46	4.1
Illinois.....	122,562	15.6	5,016	40.9	412	3.4
Indiana.....	60,192	17.3	2,560	42.5	224	3.7
Iowa.....	43,221	16.9	1,752	40.5	144	3.3
Kansas.....	29,574	15.9	1,272	43.0	122	4.1
Kentucky.....	61,878	21.2	3,794	61.3	262	4.2
Louisiana.....	48,867	22.9	3,278	67.1	288	5.9
Maine.....	15,218	17.8	856	56.2	70	4.6
Maryland.....	29,013	17.3	1,616	55.7	109	3.8
Massachusetts.....	61,262	13.8	2,446	39.9	236	3.9
Michigan.....	96,963	20.1	4,320	44.6	262	3.7
Minnesota.....	50,062	18.9	1,940	38.8	138	2.8
Mississippi.....	53,694	26.5	3,042	56.7	317	5.9
Missouri.....	58,567	14.7	3,018	51.5	229	3.9
Montana.....	10,693	19.8	486	45.5	35	3.3
Nebraska.....	22,401	16.4	815	36.4	78	3.5
Nevada.....	1,888	18.7	90	47.7	6	3.2
New Hampshire.....	7,830	15.4	373	47.6	30	3.8
New Jersey.....	56,043	12.9	2,216	39.5	205	3.7
New Mexico.....	14,290	33.9	1,554	108.7	81	5.7
New York.....	189,559	14.6	7,693	40.6	717	3.8
North Carolina.....	79,934	22.9	5,487	68.6	421	5.3
North Dakota.....	13,041	18.5	649	49.8	31	2.4
Ohio.....	112,667	16.7	4,878	43.3	433	3.8
Oklahoma.....	44,188	17.3	2,167	49.0	185	4.2
Oregon.....	16,245	15.8	636	39.2	57	3.5
Pennsylvania.....	165,984	16.3	7,623	45.9	641	3.9
Rhode Island.....	10,536	15.5	462	43.8	29	2.8
South Carolina.....	41,120	21.9	3,303	80.3	323	7.9
South Dakota.....	11,826	17.1	518	43.8	42	3.6
Tennessee.....	53,651	18.5	3,405	63.5	298	5.6
Texas.....	121,156	19.6	7,889	65.1	676	5.6
Utah.....	13,214	25.5	618	46.8	40	3.0
Vermont.....	6,301	16.5	305	48.4	23	3.7
Virginia.....	53,495	19.8	3,540	66.2	284	5.3
Washington.....	26,767	16.1	1,035	38.7	89	3.3
West Virginia.....	42,434	22.8	2,643	62.3	166	3.9
Wisconsin.....	55,004	18.8	2,301	41.8	160	2.9
Wyoming.....	4,946	21.0	256	51.8	16	3.2

*—Estimated as of July 1, 1938.

Source: Reports of the U. S. Bureau of the Census.

Peptic Ulcer

By EMMETT S. LUPTON, M. D.

DUE to the numerous letters we receive here at the State Board of health asking for information concerning "Peptic Ulcer," I am writing

this article, in the hope that I may clarify some of the questions which we are asked. This article is written for the public and is not intended

as a strictly scientific paper.

Peptic Ulcer

The term "peptic ulcers" pertains to ulcers of the stomach and duodenum. The duodenum is a short portion of bowel that connects the stomach with the small intestine and frequently is the site of an ulcer. Stomach and duodenal ulcers are enough alike in their symptoms and treatment that they may be discussed together under the title of "Peptic Ulcers."

Peptic ulcers are seen two or three times more often in men than in women. They occur most frequently in women between twenty and thirty and in men between thirty and fifty; however, ulcers do occur in infants as well as the aged.

There are several theories as to the causes of peptic ulcer. Some of the things that may cause the development of ulcers are as follows:

(1) Disorders in the blood and nerve supply of the stomach or duodenum. For example, a small blood-vessel may be in a state of constant spasm, thereby not allowing the normal amount of blood to flow through. Consequently, the area supplied by this particular blood-vessel will not be properly nourished; it becomes anemic, its resistance is lowered. As to why a blood-vessel may be in a state of constant spasm, I will answer that it is probably due to an imbalance in the nerve supply. To each artery there are nerves that cause it to dilate and there are nerves that cause it to constrict or go into a state of spasm. Any imbalance of this normal nerve supply may cause the arteries to be in a state of constant spasm.

(2) Excessive nervous strain and worry is thought to be a factor which disrupts the normal nerve and blood supply to the stomach and is therefore considered as a cause of peptic ulcer.

(3) Rough, coarse, too hot or too cold foods may play some part in ulcer production.

(4) A deficiency of Vitamin C; the excessive eating of meats, and a

germ, the streptococcus, have all been considered as causes of peptic ulcers. There are other factors that have been accused of causing peptic ulcers that I will not discuss here.

The majority of ulcers are situated at the lower end of the stomach and in the duodenum. They vary in size from that of a pin-point to that of a silver dollar; however, the majority of them are no larger than the size of a dime or nickel.

The patient with a peptic ulcer usually gives a story of having chronic digestive disturbances over a period of months or several years, and there may be times when he is completely free of symptoms. Occasionally one will experience no symptom whatever until the ulcer perforates through the stomach or duodenal wall and signs of acute internal hemorrhage or peritonitis develop.

Of the symptoms, pain is the most constant and usually comes on after meals. It may develop within fifteen minutes or it may take two to four hours after a meal for the pain to become noticeable. However, in the same patient, following the same meals, the pain usually comes on about the same time each day. For example, patients will eat a meal, have comfort, later develop pain, which will subside before the next meal; or more often, the pain will continue until the patient eats again. The characteristic cycle is food, comfort, pain and comfort; or food, comfort and pain. As a rule, the pain is a dull, burning, boring discomfort, which is most often experienced in the high abdominal region. In acute cases the pain may be extremely agonizing.

Vomiting is the next most frequent symptom and occurs in around 50 per cent of the patients.

Bleeding of the ulcer is common. Most frequently there is only a slight

oozing; however, the hemorrhage may be profuse and sudden, thereby creating a very dangerous condition.

Tenderness over the upper abdominal region is another symptom of peptic ulcer. There are several other less important symptoms which may or may not be present.

The diagnosis of peptic ulcer is extremely difficult to make at times, even in the better hospitals and among the best doctors. There are certain examinations and tests that your physician can make that will greatly help in making a correct diagnosis. The point is this: If you have some digestive disturbance, don't just call it indigestion and let it go

at that; or, if you think you have a peptic ulcer, don't go on a diet or take some medicine that a neighbor may advise. What is good for your neighbor may be bad for you. Every case should be studied and analyzed by your physician. Treatment that he prescribes is for your particular case and may even be harmful when applied to a case that is not exactly the same as yours. Then, too, your so-called peptic ulcer which you and your neighbors have been treating may not be an ulcer at all; it may be heart disease, gall-bladder disease, pancreatitis, appendicitis, kidney disease, cancer, or any number of other conditions. Why take any chances? Consult your doctor.

**TOTAL NUMBER BIRTHS AND DEATHS UNDER ONE YEAR OF AGE
(Exclusive of Stillbirths) AND MATERNAL DEATHS IN EACH
COUNTY, WITH RATE PER 1,000 LIVE BIRTHS, 1938**

	INFANT MORTALITY				MATERNAL MORTALITY				TOTAL BIRTHS	
	Place of Death		Place of Residence		Place of Death		Place of Residence		By Place of Birth	By Place of Residence
	No.	Rate	No.	Rate	No.	Rate	No.	Rate		
Entire State.....	5,461	68.3	5,443	68.2	450	5.6	449	5.6	79,903	78,951
Alamance.....	51	47.8	62	54.5	2	1.9	4	3.5	1,068	1,137
Alexander.....	15	45.9	16	47.8	2	6.1	2	6.0	327	335
Alleghany.....	9	73.8	8	64.5					122	124
Anson.....	47	61.8	46	62.5	5	6.6	5	6.8	761	736
Ashe.....	26	52.5	26	50.3			1	1.9	495	517
Avery.....	22	47.0	21	49.3	2	4.3	1	2.3	468	426
Beaufort.....	15	66.1	83	94.0	9	9.1	4	4.2	988	936
Bertie.....	71	87.3	70	85.8	2	2.5	4	4.9	813	816
Bladen.....	33	47.7	40	55.2	1	1.4	2	2.8	692	715
Brunswick.....	23	59.3	27	63.8	2	5.2	3	7.1	348	423
Buncombe.....	120	58.2	116	57.6	9	4.4	8	4.0	2,061	2,015
Burke.....	26	34.5	28	36.2					754	774
Cabarrus.....	68	66.9	75	69.1	2	2.0	3	2.8	1,016	1,085
Caldwell.....	65	70.1	69	73.8	3	3.2	3	3.2	927	935
Camden.....	6	53.1	6	52.2	2	17.9	3	2.6	113	115
Carteret.....	27	69.9	28	73.7					386	380
Caswell.....	22	41.1	27	47.9	1	1.9	2	3.5	535	564
Catawba.....	65	59.1	64	57.8	3	2.7	4	3.6	1,100	1,107
Chatham.....	26	59.6	28	61.1	3	6.9	6	13.1	436	458
Cherokee.....	35	68.4	34	68.8	1	2.0			512	494
Chowan.....	29	108.2	30	110.3	3	11.2	5	18.4	268	272
Clay.....	9	60.8	9	59.2					148	152
Cleveland.....	47	35.6	51	38.6	8	6.1	8	6.1	1,321	1,321
Columbus.....	108	90.9	117	93.4	16	13.5	15	12.0	1,188	1,225
Craven.....	68	104.6	71	105.8	9	13.8	9	13.4	650	671
Cumberland.....	119	96.2	84	71.8	22	17.8	16	13.7	1,237	1,165
Currituck.....	6	53.6	9	76.9	1	8.9	2	17.1	112	117
Dare.....	3	29.4	5	46.7	1	9.8	1	9.3	102	107
Davidson.....	70	63.8	74	66.1	8	7.3	9	8.0	1,098	1,119
Davie.....	20	62.3	20	60.6			2	6.1	321	330
Duplin.....	70	67.6	83	77.1	2	1.9	4	3.7	1,036	1,076

TOTAL NUMBER BIRTHS AND DEATHS UNDER ONE YEAR OF AGE
(Exclusive of Stillbirths) AND MATERNAL DEATHS IN EACH
COUNTY, WITH RATE PER 1,000 LIVE BIRTHS, 1938

	INFANT MORTALITY				MATERNAL MORTALITY				TOTAL BIRTHS	
	Place of Death		Place of Residence		Place of Death		Place of Residence		By Place of Birth	By Place of Residence
	No.	Rate	No.	Rate	No.	Rate	No.	Rate		
Durham	183	102.9	113	78.2	24	13.5	6	4.2	1,778	1,445
Edgecombe	104	80.8	102	80.1	5	3.9	3	2.4	1,287	1,272
Forsyth	177	72.1	170	72.3	14	5.7	14	5.6	2,455	2,351
Franklin	45	63.9	55	74.2	3	4.3	7	9.4	704	741
Gaston	105	65.3	112	67.4	6	3.7	8	4.8	1,607	1,662
Gates	13	51.4	13	50.4			1	3.9	253	258
Graham	4	28.2	4	26.7	1	7.0	2	13.3	142	150
Granville	46	59.1	50	63.7	8	10.3	7	8.9	779	785
Greene	20	37.5	32	56.1	1	1.9	3	5.3	533	570
Guilford	159	57.6	146	54.4	19	6.9	17	6.3	2,769	2,682
Halifax	108	66.2	113	70.3	13	8.0	12	7.5	1,631	1,607
Harnett	63	57.9	82	73.3	4	3.7	11	9.8	1,088	1,103
Haywood	33	40.5	37	44.8	2	2.5	2	2.4	814	844
Henderson	29	52.9	29	54.0	2	3.6	2	3.7	548	537
Hertford	30	66.6	33	71.6	1	2.2	1	2.2	450	461
Hoke	27	69.9	27	68.9	2	5.2	3	7.7	386	369
Hyde	7	40.7	7	38.3			1	5.5	172	183
Iredell	63	56.9	56	55.9	13	11.7	7	7.0	1,107	1,002
Jackson	24	50.4	26	54.8	1	2.1	1	2.1	476	468
Johnston	112	71.5	129	78.9	8	5.1	11	6.7	1,566	1,633
Jones	19	74.5	23	83.6	2	7.8	4	14.5	255	275
Lee	28	66.5	26	66.2	2	4.8	2	5.1	421	393
Lenoir	127	124.4	99	105.7	13	12.7	8	8.5	1,021	937
Lincoln	27	53.6	27	55.7					504	484
McDowell	36	65.6	34	61.2	1	1.8	1	1.8	549	556
Macon	21	51.6	20	49.3	2	4.9	2	4.9	407	406
Madison	40	69.7	41	69.7	2	3.5	3	5.1	574	588
Martin	54	68.9	57	70.9			2	2.5	784	804
Mecklenburg	206	74.3	174	65.3	17	6.1	13	4.9	2,773	2,663
Mitchell	27	58.4	27	58.7	3	6.5	4	8.7	462	460
Montgomery	15	47.8	15	44.5	2	6.4	2	5.9	314	337
Moore	27	45.9	30	51.9	4	6.8	3	5.2	588	578
Nash	112	72.7	104	68.1	13	8.4	12	7.9	1,540	1,527
New Hanover	106	100.1	64	69.7	9	8.5	7	7.6	1,059	918
Northampton	22	33.3	25	35.3	3	4.5	6	8.5	661	709
Onslow	45	89.1	57	106.5	1	2.0	3	5.6	505	535
Orange	11	27.5	21	42.2	2	5.0	5	10.0	400	498
Pamlico	18	72.9	18	71.1	1	4.0	1	4.0	247	253
Pasquotank	42	109.9	41	110.5	8	20.9	5	13.5	382	371
Pender	33	78.0	43	95.1	1	2.4	2	4.4	423	452
Perquimans	16	71.1	16	69.3	1	4.4	1	4.3	225	231
Person	33	43.5	40	52.0					759	757
Pitt	118	82.5	128	86.4	3	2.1	7	4.7	1,431	1,481
Polk	32	146.1	18	84.1	2	9.1	2	9.3	219	214
Randolph	39	48.5	45	54.9					804	820
Richmond	51	65.8	52	64.8	7	9.0	7	8.7	775	802
Robeson	169	76.1	163	75.8	13	8.9	12	5.6	2,222	1,560
Rockingham	68	55.5	74	60.2	4	3.3	4	3.3	1,226	1,227
Rowan	66	54.8	67	55.0	3	2.5	3	2.5	1,205	1,218
Rutherford	53	52.7	55	54.1	4	4.0	4	3.9	1,006	1,014
Sampson	72	59.3	92	73.2	11	9.1	13	10.3	1,214	1,235
Scotland	55	107.4	57	109.0	5	9.8	5	9.6	512	508
Stanly	38	51.4	40	55.4	4	5.4	4	5.5	740	722
Stokes	35	68.5	36	67.9	3	5.9	3	5.7	511	530
Surry	74	74.4	73	75.4	5	5.0	4	4.1	994	968
Swain	27	68.5	27	69.9	3	7.6	3	7.8	394	339
Transylvania	18	66.9	17	63.4	2	7.4	2	7.5	269	268
Tyrrell	10	71.9	10	70.4					139	142
Union	63	66.6	65	68.2	3	3.2	4	4.2	945	953
Vance	42	62.9	41	62.1	1	1.5	2	3.0	668	660
Wake	177	82.6	171	81.0	19	8.9	16	7.6	2,144	2,110
Warren	41	70.3	43	72.1	2	3.4	3	5.0	583	596
Washington	21	67.7	23	72.6	2	6.5	2	6.3	310	317
Watauga	18	42.7	19	45.8	2	4.7	2	7.8	422	415
Wayne	126	106.5	127	107.0	8	6.8	6	5.1	1,183	1,186
Wilkes	46	42.5	48	44.2	1	0.9	3	2.8	1,083	1,087
Wilson	138	111.9	130	108.2	7	5.7	4	3.3	1,233	1,201
Yadkin	23	59.0	28	61.3	1	2.2	1	2.2	390	457
Yancey	23	51.2	24	51.2	2	4.5	2	4.3	449	469



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HUNTING MALARIA PARASITES

The above picture illustrates the thoroughgoing methods used by health workers in their efforts to eradicate malaria. Every year in the Autumn groups of technical workers similar to those pictured above at work in Edgecombe County procure specimens of blood from individuals in communities where malaria is known to exist.

The work is done by the county health departments, cooperating with the State Board of Health.

It will thus be seen that in addition to drainage and screening, many other methods of malaria control must be followed.

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The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
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 Diphtheria
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 Eyes
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German Measles
 Health Education
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 Malaria
 Measles
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 Residential Sewage
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SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care
 Prenatal Letters (series of nine monthly letters)
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 Breast Feeding
 Infant Care. The Prevention of Infantile Diarrhea.
 Table of Heights and Weights

Baby's Daily Time Cards: Under 5 months; 5 to 6 months; 7, 8, and 9 months; 10, 11, and 12 months; 1 year to 19 months; 19 months to 2 years.
 Diet List: 9 to 12 months; 12 to 15 months; 15 to 24 months; 2 to 3 years; 3 to 6 years.
 Instructions for North Carolina Midwives.

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Notes and Comment

By THE EDITOR

THE statement has been repeatedly made in these columns that the readers of *The Health Bulletin* may look for at least one instructive article in every issue of *The Health Bulletin*, an article carrying information helpful to the citizens of the State and on subjects which are important for them to know.

In this issue the leading article, the highlight, so to speak, is an article by Dr. R. A. Herring, Director of the High Point Health Department, under the title of "The Importance of Preventive Work for the Hard of Hearing." It is hoped that every school superintendent and teacher, together with the thinking parents of small children, in the whole state will read this article. It should be filed for future reference. It simply calls attention to the necessity for constructive work for a class of children heretofore grossly neglected, that is, the children who are hard of hearing.

The Editor of *The Health Bulletin* has carefully refrained during all the years of his responsibility for the editorship of the publication to over-emphasize the need in this field. Some of his friends know of his own deficiency in hearing and what the handicap has meant to him and what it has cost him in almost everything, and for that reason he has felt that it would probably be better for him to bend backward, so to speak, even to the neglect of help for the deaf, rather than be charged with making

capital out of a personal deficiency. It is time, however, that this reticence be forgotten in the interest of the five per cent of children in the state who are doomed to the handicap of deafness and all that that means, unless active, intelligent, scientific measures be taken for the benefit of such children before it is too late.

There is not an excess word in Dr. Herring's article. Every sentence speaks out for itself. Dr. Herring carefully refrains from editorializing or expressing opinions. His article is a factual one and for that reason alone, if for no other, should receive careful study.

There is no class of people in the world who have a harder time making a living and attaining to a satisfactory course in life than those who suffer from deafness. They are the butt of ridicule for every cheap comedian on stage and screen; they have been the subject of more jokes than the mother-in-law; they are social outcasts; there is no place in prayer meeting or at the bridge table for one of them; they are never invited to join the various clubs or the social organizations because their presence is not wanted in a world geared up for people with normal hearing. The whole world is organized to help the blind. They are beneficiaries of more sentiment than any other group of handicapped people. If a blind man tries to cross the street in the face of crowded

traffic, a hundred people are ready to jump to his aid. If a deaf man starts out in the street and a car comes tearing around the corner and runs over him and kills him, people will say, "What business did the darn fool have in the street; why didn't he look or listen?" The moment a deaf man asks a friend to repeat a question in a normal conversation and to raise his voice, the friend will look at him in a curious manner. The third time that such a request is made, the friend will lower his voice and begin to back away with a curious kind of look, as if to say, "How do you get that way?" The fact is that the average deaf person is blamed by the individual of normal hearing for his defect on the ground that it is something in the nature of a personal attitude, and that the deaf fellow should do differently.

Pages might be utilized in extending these remarks, but it is possible that enough has been said. Please read Dr. Herring's article.

* * * * *

In view of the mention made in the foregoing paragraph of Dr. Herring's article and the necessity of work for the deaf, it is only fair in this same connection to call attention to some exhaustive studies made in Martin County last year by Dr. F. E. Wilson, the County Health Officer in some excellent preventive work for the preservation of good vision and prevention of defective sight.

On January 1, Dr. Wilson became health officer of the Edgecombe-Greene District, but he completed his studies of the work in this connection in Martin County. Sometime ago he published the result of his survey and the tests made in a comprehensive article in the *Williamston Enterprise*. It is to be hoped that the State Commission for the Blind

will procure copies of his article in the Williamston paper and have it published in pamphlet form and distributed throughout the state. The State Commission for the Blind, the Lion's Club of Williamston, and the Virginia Electric Power Company operating in Martin County all participated in the survey made under Dr. Wilson's direction.

The survey made no attempt to locate diseases and infections of the eyes, which of course were medical matters, some of which were temporary conditions. The tests were limited to those for mechanical, visual and physiological errors. A conservative critic would conclude that Dr. Wilson found too large a percentage of children having defective vision, when considering his statement that about forty-three per cent had definite defects, but on reading his conclusions that more than forty-five per cent of this group of children failed in one or more grades, the critic would have to admit that that was good argument for the excessive percentage of defective children.

It is hoped that some of the other health officers in counties geographically well removed from Martin will undertake such studies next fall in order to ascertain whether or not visual defects are as common as Dr. Wilson found. Dr. Wilson is to be highly commended for his thoroughgoing experiment and work in this field, and it is to be hoped that he will continue to make further studies in his new and important field as district health officer for Edgecombe and Greene.

* * * * *

Notwithstanding the fact that the editor of *The Health Bulletin* has been rather well overburdened with various duties during the last few years, he found time in April to visit a short while with two or three different

health departments. The first visit was with the Edgecombe-Greene Health District annual meeting of midwives in the courthouse at Tarboro. This visit, however, took place in March and it was an inspiration to be present and mark the wonderful progress that has been made in this field during the last twenty or more years. A group of about forty midwives brought up by the nurses in Greene County and coming in from all over Edgecombe County spent the better part of the day in their annual class meeting in which the nurses and the health officer gave them instructions, quizzed them closely with reference to their work, required the exhibition of their equipment for carrying on the work, at the conclusion of which permits were renewed for another year. Dr. Wilson showed them some moving pictures which he had made which interested them very much. Some important health facts were thus placed before them in a way they could understand. An annual picnic dinner was served in the courthouse by the midwives attending.

With the editor and Dr. Lupton were Misses Fisher and Patton of the State Health Department staff of nurses and Miss Ruth Heintzelman of the United States Children's Bureau.

Another visit which the editor found inspiring in every particular was with the Northampton County Health Department. Dr. Parker and Miss Buchan and their associates in that department are putting on a wonderful piece of work. Suffice it to say that there will be more in *The Health Bulletin* before the summer is over about this highly specialized demonstration project.

Another call which he enjoyed for a few minutes was with the Bladen County Health Department late in the afternoon after the conclusion of the

ordinary day's work. The nurses and the office personnel were found to be very busy with the preparation of some of the numerous reports which seem such a necessary part of the work in every department, state and local, at the present time.

One of the most enjoyable half hours during the month was spent with Dr. M. T. Foster and his able and efficient group in Fayetteville. It is an inspiration to the editor at any time to visit the Fayetteville department and see the efficiency and precision with which that work is carried on.

* * * * *

The day before these lines were written, the editor had the privilege of hearing two of the ablest sermons on mission work he had ever been privileged to hear. The sermons were preached in the First Presbyterian Church in Raleigh by the Reverend Dr. A. Hart Miller, a native of Georgia and brother of Dr. P. D. Miller of Raleigh and of Dr. O. L. Miller of Charlotte. Dr. Miller has been a missionary in the African Congo for twenty-one years. His sermons were graphic descriptions, giving touches of more or less intimate details which were highly interesting.

In discussing some of the problems that the missionary had to meet in the section of Africa where he has worked, two of the problems were of much interest to the editor. One was the trouble they had with the activities of the medicine men who still beat the tom-toms in accord with all the historical traditions. Dr. Miller states that the numbers are being lessened all the time and that eventually the medicine men in Africa should go the way of the medicine man in North Carolina, the kind who used to sell snake oil during court week under a torch light near the court-

house square. Like the snake oil salesman whose product was good for every man and beast, the medicine men of Africa can cure anything.

The other problem represents the same kind of a problem that exists in North Carolina, some of which have been mentioned during the last few years in the columns of *The Health Bulletin* under the general title of "Humbugs". The humbug racket that is most serious in the African Congo, according to Dr. Miller, is the quack who recruits contributions in the United States and goes to Africa to exploit the ignorant, helpless bushman in a manner very similar to the activities of such persons who carry on here. Verily, the come-on artists and the exploiter of human frailty has a wide field in which to operate, the field, according to Dr. Miller, extending all the way from the circles of culture and refinement in the United States to the bushman of Africa.

* * * * *

A news item which comes to this desk and which is very interesting to the editor of *The Health Bulletin* is noted in the *Mount Airy News*. It is simply the statement that the construction of four new rooms to the Surry Health Department which is located over the City Hall at Mount Airy and to cost approximately \$1,000 will begin at once. The people of

Mount Airy and Surry County are to be congratulated and so is the health officer, Dr. Franklin, and his staff. One of the handicaps to health work in many of the counties of the state has been inadequate quarters, often stuck away in the attic of the courthouse or down in the basement or in some inaccessible location.

Come to think of it, while the editor has had no reports whatever from any county health officer, he happens to know that the Sampson Health Department has fine and adequate quarters in the new remodeled courthouse at Clinton; the Lenoir Health Department at Kinston has had for more than a year excellent quarters and it is understood that their quarters in the new Kinston courthouse will be adequate; Dr. A. C. Bulla, health officer of Wake County and Raleigh, has recently moved into fine new adequate quarters in the remodeled old building which was formerly Rex Hospital. If there are others the editor would like to hear about it, and the advice to all those health departments whose quarters still have to be found with a microscope would be to the health officer to keep on trying. The work of the health department justifies adequate quarters in the very best and accesible location in any city or town.

The Importance of Preventive Work for the Hard of Hearing

By R. A. HERRING, M. D., Director, High Point Health Department

A RECENT approach in this state to an old subject relates to the work during the past two years of the state and some local health departments in the field of the hard of hearing.

This work, consisting of careful testing of the auditory capacity of

selected groups of public school pupils by means of the Bell Laboratories 4 A audiometer to determine the extent of defects of hearing, was begun in the fall of 1938 and continued for a period of two school years. The instrument used, having been developed and introduced for use about

1926, now makes it possible to detect and measure hearing losses by tests that are scientifically accurate in their results. The field work was done under the direction of the Division of Preventive Medicine of the State Department of Health by a technician trained and experienced in this field. Tests were given to 40,967 pupils in the public schools of Mecklenburg and Gaston Counties, Asheville and Buncombe County, High Point, Greensboro, Rocky Mount and Goldsboro above and inclusive of the third grade since the younger pupils are too immature to cooperate in the tests. Hearing losses were reported in eight per cent of the pupils tested. While the exact number is not stated in the reports of this work at hand this ratio approximates 3,300 pupils with demonstrable auditory defects. On the basis of similar studies this ratio is admittedly somewhat higher than the findings reported in other areas.

We know that physical defects in school children, aside from the direct effect upon their health, also have, in many cases, the general effect of retarding school progress. Impaired hearing should have this latter effect since it may be assumed that a pupil of normal intelligence but with defective hearing cannot exercise his full capacity in receipt of teaching instruction. The important question in the problem, therefore, is to what extent school progress is retarded by defective hearing. The findings resulting from study of this question, as revealed by the auditory tests made in one area, High Point, are interesting. The study includes analysis of tests made upon 5,894 public school pupils, this number being the entire enrollment above the second grades including the high schools. Of this number 505 pupils were found to have hearing losses of six decibels or more.

As in the findings from the entire state where testing was done this percentage is manifestly too high and is explained by inability, due to lack of time to screen out by retest probable erroneous results of first test in some cases due to inattention, misunderstanding as to carrying out the tests, extraneous noises, transient head-colds, etc., a precaution necessary before accurate classification of the case can be made. Assuming, therefore, that North Carolina school pupils have no fewer auditory defects, and they should have no greater number, than similar groups elsewhere an average of about five per cent, which is found throughout the United States, may be expected to prevail in this state also.

For purposes of the study a group of white pupils found on first test to have hearing losses of twelve decibels or more were selected from the total of 505 pupils, having indicated losses of whatever degree. This group, therefore, includes only pupils with the severer grades of hearing defects which presumptively should have the greatest effect in causing retardation. The scholastic records of 194 of these pupils since entrance in the public schools were then investigated and from these records the table below showing grade repetitions was constructed.

	Grades Repeated by 194 Hard of Hearing Children	Per cent
Up to normal grade.....	80	41.2
Repeated 1 grade.....	67	
Repeated 2 grades.....	27	
Repeated 3 grades.....	14	
Repeated 4 grades.....	6	
		58.8

The data presented indicate that 114 pupils of this group repeated grades from one to four times since entrance into school, this number being 58.8 per cent of the total with indicated severer grades of hearing losses. In the aggregate the scholastic records of these 114 pupils show grade repetitions amounting to 161

years or an average of about 1-1/3 years per pupil.

Studies have been made in a number of areas in the United States to determine the relationship of auditory defects to school progress. These have shown that pupils with partial deafness repeat grades about three times as frequently as pupils with normal hearing. Moreover these defects have been found to have a greater effect in this direction than uncorrected visual defects. Pupils with unilateral defects are found to average one-half year and those with bilateral defects one year below the average in school progress. The findings in grade repetitions occurring in High Point appear to parallel very closely similar findings elsewhere, the latter showing in two studies 60.5 and 64.7 per cent of pupils with auditory defects repeating grades from one to six times as compared to 58.5 per cent in High Point. It is very probable that comparable findings as to retardation would result from investigation of the tests made elsewhere in the state. The problem in North Carolina therefore may be assumed to be as urgent as has been found in other states and to warrant just as urgently application of remedial measures.

There is manifest waste of money in repeating teaching instruction in the case of children with hearing losses severe enough to cause retardation and experience in a number of places in the United States shows that if the proper means are applied to find the hard of hearing pupils and to treat them medically and educationally more money will be saved by preventing their retardation than will be expended to discover and treat them. There are other considerations of importance in bringing about the auditory rehabilitation of these children. Relief of their

auditory defects has a high value in the direction of psychologic rehabilitation also. On account of their conscious inability to progress in school many of these pupils develop attitudes of defeatism and other inhibitions that further impair their efficiency. They quit school early and continue this attitude into adult life this resulting in decreased earning power.

Many well known and easily prevented and corrected etiologic factors are responsible for the production of acquired deafness. Of great importance also is that hearing defects are nearly always progressive unless detected and corrected, if feasible, by proper treatment, a point adding to the urgency, and especially in school children, of finding these defects and instituting remedial measures.

As far as possible every child with deficient hearing should receive attention in the effort to relieve the defect or to compensate for it through appropriate available means.

A program of activity in this field may be outlined as follows:

(a) Annual audiometric group testing of all pupils from the third grade through high school and retesting of those with hearing losses indicated on first test. Pupils below the third grade with suspected defects should be tested individually under a special technic. Yearly examinations are important for two reasons; first, because hearing defects may develop during any year of school life and second, because low grade defects may progress to severer types from year to year.

(b) Referral for examination and treatment at the hands of specialists of all pupils with demonstrable hearing losses. Many may be restored to normal hearing by appropriate treatment and others have their hear-

ing improved or progression prevented.

(c) The remaining group may be helped through special attention by the teacher in the classroom, by lip-reading instruction or by use of artificial hearing aids.

Some pupils with only slight defects or merely decreased hearing acuity require nothing more than to be placed in the front of the classroom and for the teacher to face them and speak directly to them in classroom instruction. Lip-reading instruction is necessary for others yet requires specialized organization of classes conducted by trained teachers. A number of school systems in the United States have instituted programs of instruction in lip-reading. A remaining smaller number of pupils with severer defects can be benefitted only by adaptation of artificial hearing aids, several types of these devices of high efficiency now being available.

Necessarily to be complete the program must stress prevention of defects of hearing. This is the feature most difficult to accomplish, however, and resolves itself largely into education. Particularly is attention to be given the prevention of the catarrhal (conduction) types of deafness. This is the most frequent type of acquired deafness in childhood and results from numerous conditions producing middle ear infections and congestions.

The promotion of such a program in any school system requires the cooperative interest of several groups, viz: The health authorities, the school authorities and, of course, the pupils and their parents. To the two former groups will fall the responsibility of organizing the facilities for testing the pupils, the field work, the classroom attention necessary for pupils with mild defects and the organization of lip-reading classes and providing instructors. However, since the pupils to be benefitted will fall into one or the other of privileged and underprivileged classes the cooperation of another group will be of great assistance in the program. Many of the pupils found to have defects of hearing will be privileged whose parents can provide everything necessary for them. Others, however, will be underprivileged and a voluntary civic group may render great assistance by providing the medical attention, hearing aides and other needs for those pupils whose parents are unable to furnish these needs.

A program such as outlined above is now in process of development in High Point with the local Kiwanis Club sponsoring the program as the contributing voluntary agency. While the program is in its early stages there is every indication that it can and will be made as far reaching and valuable in preventive objective as any field that may be taken up from this point of view.

Card-Room Fever

Strict control of dust will eliminate health hazard from low-grade cotton

*By M. F. TRICE**

AN OUTBREAK recently of respiratory disturbances among workers in a North Carolina mill has called attention to the need of preventive measures to eliminate the health

hazard due to excessive dust in cotton card rooms. Investigation by the State Division of Industrial Hygiene revealed that the practice of blowing settled dust off the cards

and into the air by means of compressed air results in exposure of the workers to an excessive amount of the finer dust particles for most of the time. To eliminate the hazard, effective dust-control measures are essential.

In 1936 a worker in a North Carolina mill, alleging partial disability caused by respiratory trouble which developed as a result of exposure to dust generated in the carding of low-grade cotton, put in a claim for compensation under the Workman's Compensation Act. He testified that he had been employed by the mill for some seven or eight months, but that he experienced no respiratory trouble until after the beginning of the processing of a low-grade, discolored cotton. Within a few days after this batch of cotton reached the carding machines, he found it impossible to refrain from coughing almost continuously and finally suffered coughing paroxysms night and day. These fits of coughing were finally accompanied by gastro-intestinal disturbances that caused vomiting. Three or four weeks after the onset of the respiratory disturbance the man quit work.

The physician who had been called in by this worker testified that, when first attended, the man had an acute inflammatory condition of the nasal pharynx and bronchi accompanied by fever and a bad cough; improvement had been slow. He stated also that he had treated some 25 or 30 other employees of the mill for the same ailment.

The cotton involved in this outbreak of respiratory trouble was tawny in color and contained much foreign material, such as bits of boll, leaf, and stem fragments. This worker was denied compensation when clinical and radio-graphic examination revealed no evidence of silicosis, or as-

bestosis, the only dust diseases that are compensable under the law.

Recent reports from other mills of respiratory disturbances among card room workers have resurrected the case. In the summer of 1938 the Director of the Division of Industrial Hygiene was requested by a local health officer to inspect a mill, the employees of which suffered from an acute respiratory disorder. Investigation revealed that the trouble was confined mainly to the employees of the card room and the cotton opening departments. Here, too, the difficulties developed only after the arrival of a batch of cotton which appeared to be identical in character to that involved in the initial case.

Search of the literature revealed that British mills had encountered similar difficulties and that scientists had made a study of the industry to discover the cause. Thus, in a report by the Medical Research Council, C. Prausnitz states that from a study of the problem of "strippers asthma" he was led ultimately to the view that there is a specific agent in cotton dust capable of producing the observed symptoms and ultimately the pathological changes in the lungs which cause complete disablement in a number of workers exposed to cotton dust for a long time.

In North Carolina the two cases of respiratory disturbances that have come to the attention of the Division have involved a low-grade cotton. No evidence has been obtained to indicate that the workers in these mills suffered any respiratory discomfort while cleaner material was processed. It is doubtless true that the processing of the low-grade cotton exposed the workers to considerably more dust than they had been accustomed to, which alone probably would have accounted for an increased incidence of respiratory trouble. On the other

hand, histamine, a toxic substance found in cotton dust, may play a considerable role in the causation of the more acute reactions.

When the settled dust on carding machines is blown off into the atmosphere with compressed air, enough particulate matter and lint are blown into the air to produce a fog. Much of the dust removed from the machines in this manner settles back on them, only to be blown again into the air at the next cleaning. Despite the factors of ventilation and humidity which tend to control air dustiness to some extent, the practice of blowing off machines certainly results in exposure of the workers to an excessive amount of the finer particles for much of the time.

To reduce the hazard, steps should

be taken to control card-room dust in every mill in which it is present in the air in excessive amounts. Better ventilation alone will result in a decrease in atmospheric dustiness. There should be at least six complete air changes per hour, and more frequent replacements may be desirable. Use of vacuum strippers and grinders is recommended for all mills; vacuum cleaners for general work should be used wherever possible. In some instances such improvements may practically eliminate the card-room dust hazard; in others, it may be that nothing short of complete inclosure and exhausting of cards will solve the problem.—*Textile World*, March, 1940.

*Industrial Hygienist for the North Carolina Industrial Commission and the North Carolina State Board of Health.

The Problem of the Premature Infant*

By ANGUS M. MCBRYDE, M. D., Durham

A PREMATURE infant is one who is born before his normal time, or who weighs less than five pounds. The problems of the prevention of premature birth and of the proper care of the premature infant after he arrives are very important, since prematurity is the main cause of death during the first month of life. Very little has been done to reduce the number of deaths in babies under one month of age, as compared with the marked decrease in deaths in babies over one month.

The best method of preventing premature births is that each prospective mother has adequate care by her physician, or if she cannot afford a physician, at the Watts, Lincoln or Duke clinics, or at one of the maternity clinics in Durham. Monthly visits throughout pregnancy usually will prevent premature birth and

will greatly increase the chances of having a baby that can live. Experience has shown that infant deaths are twelve times higher among mothers who do not visit their physicians or clinics regularly during pregnancy.

As soon as the premature baby arrives, every effort should be made to keep him warm. These small babies are not able to maintain their body heat, and their temperatures rapidly fall unless they are surrounded by hot-water bottles. If the baby's temperature falls as low as 94°F, his chance of living is decreased by about 50 per cent. On the other hand, the room-temperature must not be too high, as in summer months it may lead to severe or fatal diarrhea. In addition, it is necessary to increase the moisture in the room, so that the baby's body may not lose too much fluid and become too dry.

The premature infant can take only small amounts of food and must be fed at regular but frequent intervals, sometimes every two hours. If he is too weak to swallow, and many of them are, the food may have to be given through a tube. A physician should be consulted frequently about the feeding.

The premature baby also has very little resistance to infections, and a slight cold may easily lead to pneumonia. Therefore, special care must be taken to see that no person comes near him who has a cold. As few

persons as possible should be allowed to come into the room, and he should never be exhibited to well-meaning but curious visitors.

This essential care for premature babies can only be given adequately in a hospital. The hospitals of Durham have facilities for this care and no premature baby need be kept at home. In transporting the infant to the hospital, ample heat should be supplied about his body by blankets and hot-water bottles.

*From a series of articles published in the newspapers of Durham under the sponsorship of the local Medical Society.

What of Air Conditioning!*

By M. FRANK WOOTEN, JR., Consulting Engineer, Charlotte, N. C.

WHEN the term "air conditioning" is used, what kind of a picture comes to your mind? Many people immediately think of the summer cooling in some downtown store and the picture isn't quite clear as to just what it really means. So it seems that any article on the subject should begin with a definition of the term. As given in the A. S. H. & V. E. "Guide", air conditioning is: "A process by which simultaneously the temperature, moisture content, movement and quality of the air in enclosed spaces intended for human occupancy may be maintained within required limits". Which means that there are at least four separate and different functions which must be done before it is air conditioning. The word "simultaneously" is important too, for it says that all of these functions must be done at the same time. Therefore, the picture of air conditioning seems to include much more than the simple cooling. In fact cooling is a function which is only used during a part of the year when outside temperatures are high. Other func-

tions, such as air cleaning, are used all year and in some cases are much more important than cooling.

It is interesting to note the phrase "intended for human occupancy" in the definition. It does not mention home, office, store or any other place but includes all places where people may go. Then the uses are wide and may be applied to almost any place. The use of air conditioning as a benefit to health is probably one of the most important uses to which it can be applied and is one which will be utilized more and more in the future. This important use has been more or less overlooked because few people realize the benefits that can be had by properly using this relatively new thing. Then too, industry and business are usually quicker to use something which they think will help business than are individuals. It has helped business for these people in more ways than one. If you ask them how it has helped, most of them will overlook one way. They have failed to remember that their employees lost

fewer days from work due to sickness and that they worked better and harder because they were feeling well. Of course, such answers would not come from partly air conditioned places or places which used it as a means of attracting business only during the summer months. It would come from places where complete air conditioning was used twelve months out of the year.

Of course air conditioning has many uses besides those which we are interested in here. It is interesting to note in passing that industry has been quick to take up and use this new child of science. Some of the earliest experiments with air conditioning were done for industry alone. The need for it was felt before it was available and today certain of our industries consider it as much a part of their necessary equipment as the machines which do the actual processing. Let us hope that the time will come when every individual will feel the same way about the health of those who will occupy the building they are planning to erect. When that time comes there will be fewer cases of respiratory illness and this will truly be a better and more healthful place in which to live.

It is said that more than half of all diseases are respiratory and that about half of these are caused by "infected" air. Such a condition should not be allowed to exist without attempting to do something about it. This is probably true because we "use" more air than any other one thing. Few people realize that while the average human consumes about three pounds of food and about four pounds of liquid they are consuming thirty-four pounds of air. These quantities are considered to be the average daily diet. The fact that about eighty per cent of the daily diet is air should suggest its

importance to many. When more of the public realizes its importance, there will be more of a demand for treatment of it. It was not so many years ago that it realized the importance of treating the water for drinking purposes and of improving and protecting food supplies. Today millions are spent to do these things because we realize the need for it. Why then should we not expect the same protection insofar as possible for the one substance which constitutes about eighty per cent of our daily "food" and about sixty per cent of our energy source? There are many reasons advanced for not doing it now. But all of these will be overcome in the future and when they are there will be a marked increase in the general health and a great decrease in the number of cases of disease and respiratory infections.

With these thoughts in mind, it isn't difficult to predict the part air conditioning will play in the future of the world and the influence it will have on the organization of forces to improve the general health. A quick glance at some of the things air conditioning has started to do in the medical and health fields will give further insight into its future and what can be expected of it. Air conditioning has changed the entire picture in the modern hospital operating room. Lives have actually been saved by air conditioning in the nurseries for premature infants. The subject of fever therapy with air conditioned cabinets is almost untouched and yet the results are great. Air conditioning has given a great deal of relief in cases of allergic disorders. Much progress has been made in oxygen therapy through the use of air conditioning. These and other special applications which are being developed and will be developed hint

at the possible place air conditioning will play in the future of the world and in the medical and health fields.

In a later article in this series the subject of man's physiological need for air conditioning will be discussed. There is a very definite need for control of the various physical properties of the air in which man literally

lives during every minute and hour of his life. Some of the needs for temperature and humidity control will be discussed in the next article.

*NOTE: This is the first of a series of articles on this subject which Mr. Wooten has promised to write. We are grateful to the author, former employee of the State Board of Health, for his valuable contributions—Editor.

Infants and Diarrhea

By EMMETT LUPTON, M. D.

IT is summer and diarrhea time is here. Diarrheal diseases hold third place on the list of causes of death under one year of age. Around ten per cent of all deaths under one year of age are due to gastrointestinal disorders. Diarrhea is the commonest ailment of infants during the summer months and is a problem that every mother should keep in mind and try to prevent. It is a condition that—to a large extent—can be prevented.

The three main causes of summer diarrhea are (1) hot weather, (2) infections, and (3) artificial feeding. Let us consider these causes further.

Hot weather increases the body metabolism; this requires the tissues and organs to do extra work. The summer heat not only demands increased body metabolism, but it makes infants fretful and irritable. When one is irritable it interferes with the normal physiology of digestion. Thus excessive heat not only requires more from the digestive system, but at the same time it lowers one's digestive ability if one is irritable and angry. With this understanding it is easy to see how hot weather may act as an agent in causing diarrhea.

In the summer months it is important to dress infants in light, loose

fitting garments and to keep the baby's room from becoming over heated and stuffy. Keep the room well ventilated, but be sure that there is no direct breeze striking the baby. Another aid in keeping babies cool and comfortable during the summer is to offer them plenty of water between feedings. Just as automobiles and adults require more water during the summer, so do infants. This is very important and the cost is nothing. Be sure you boil the water first.

Infections not infrequently cause diarrhea. Colds, throat infections, infected ears, pyelitis and many other infections often result in infants having diarrhea. In such cases the clearing up of the infection will cause the diarrhea to cease. From this it is obvious that every patient with diarrhea should have a thorough examination by a physician. Some hidden infection as pyelitis, or an infected ear may go undetected unless a careful examination is made. If this is not done the sick baby may grow steadily worse while the "Grandmother" is fooling around with some remedy as "Catnip tea."

Artificial feeding.—As a rule the average baby does a little better if it is breast fed. It is the duty of every mother to nurse her baby un-

less a physician advises against it, due to some contraindication.

Improper feeding, unclean milk, carelessness and ignorance claim the lives of many babies each year. This is a tragedy and a disgrace that can and should be prevented. Bottle fed babies are more likely to develop diarrhea than those who are breast fed. It is extremely important that all bottles, nipples and containers be boiled thoroughly each time before using. Also, the hands of the person who prepares the baby's formula should be scrubbed with soap, water and a brush.

A cheap, safe, easily digestible formula that is used for infant feeding in some of our better hospitals is as follows: 1 large can (13 ounces) of evaporated milk (unsweetened), 1 can of boiled water (13 ounces), 1 teaspoonful of Lactic Acid (U. S. P.), 3 level tablespoonfuls of cane sugar.

Directions: Be sure that all utensils are thoroughly scalded with boiling water. Pour the milk into a quart jar or bottle. Then fill the empty can nearly to the top with boiled water that has cooled to a luke warm temperature. Put the Lactic Acid and the sugar into the can of water. Thoroughly mix until the sugar is dissolved. Then pour the contents of the can slowly into the bottle of milk shaking the bottle to afford thorough mixing. Of this mixture give the baby $1\frac{1}{2}$ ounces per pound of body weight per day. Divide the total amount into 4 to 6 equal feedings according to the age of the baby. Example: If your baby weighs 12 pounds he should get 18 ounces of the above mixture each day. Divide this amount into 4 equal feedings and the baby will be getting $4\frac{1}{2}$ ounces at each meal.

The formula outlined above is approximately equivalent to one quart of

cow's milk, but it is safer and easier to digest. Babies on such a formula are less likely to develop diarrhea. To make a good formula from cow's milk add 2 teaspoonsfuls of Lactic Acid (U. S. P.) drop by drop to one quart of pasteurized milk while stirring it constantly. If the milk is not pasteurized boil it for three minutes but make sure that it is cold before adding the Lactic Acid. Of this formula give the infant $2\frac{1}{4}$ ounces per pound of body weight per day. Example: Baby's weight—12 pounds. $12 \times 2\frac{1}{4} = 27$ ounces of formula required. Give four feedings of a little more than $6\frac{1}{2}$ ounces per feeding. If the baby requires more food than one quart of milk daily do not increase the milk, but add solid foods to the diet.

Of the above ways and suggestions on how to prevent diarrhea I would say that the addition of Lactic Acid to the babies formula is the most important single method. Lactic Acid prevents an overgrowth of bacteria in the milk and thus lessens the chance of the baby developing diarrhea. The more serious types of diarrhea are caused by bacteria. Bacillary Dysentery (commonly called colitis) is caused by germs. The ways in which babies are infected with these germs are through food, milk, water and flies. Observe the precautions I have outlined above and eliminate flies from your home, then your baby will less likely have diarrhea or dysentery.

If your baby should happen to develop diarrhea there are four things a mother should do: (1) Cut out all food for twenty-four to thirty-six hours. (2) Offer the infant a solution of weak tea every hour that it is awake. (3) Place all diapers in a tin bucket containing soap powder and

water; be sure the bucket is covered. (4) Call a physician. Do this at the beginning of the illness and don't wait until the child's skin is loose, dry, wrinkled and hot, or wait for its

eyeballs to become soft and sunken. The younger the child the more urgent it is to consult a physician. The longer you wait the more risk you run.

American Public Health Association Meeting

THE 69th Annual Meeting of the American Public Health Association will be held in Detroit, Michigan, October 8-11, with the Book-Cadillac Hotel as headquarters.

The Michigan Public Health Association, the American School Health Association, the International Society of Medical Health Officers, the Association of Women in Public Health, and a number of other allied and related organizations will meet in conjunction with the Association.

The Michigan Committee on Arrangements is headed by Mr. Abner Larned of Detroit. Dr. Henry F. Vaughan, Health Commissioner of Detroit, is Executive Secretary.

The Annual Meeting of the American Public Health Association is the largest and most important health convention held on this continent. It will bring 3,500 health officials to Detroit for a series of scientific meetings covering all phases of health protection and promotion. A Health Exhibit will be held in connection with the meeting and an Institute on Health Education is scheduled prior to the official opening.

Dr. Reginald M. Atwater is Executive Secretary of the American Public Health Association, with offices at 50 West 50th Street, New York City.

"Raises Nuffin But Us"

By EDITH EARNSHAW in *News and Observer*

Bettina's back yard is a show-place—

The grass is a carpet of green,
The borders are blazing with color;
With neatly cut walks in between;

And often I hear through the high hedge
Dividing her back yard from ours;

"My dear, how on earth do you do it!
You raise the most wonderful flowers!"

This back yard of ours is a play-place,
At times is a court or a ring,

Is always a gridiron in Autumn,
Of course is a diamond in Spring;

Mistaking our place for the show-place

An old lady sought our back yard
And went up to four-year-old Bobby

Who watched while his brothers played hard;

"My child, does your mother raise flowers?"
She asked him. He answered her thus;

"O no, Ma'am!" Then, very politely:
"Her doesn't raise nuffin but us!"



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THREE VETERAN NORTH CAROLINA PUBLIC HEALTH NURSES

The public health nurse is one of the most important and essential workers in a modern health department. Recently their great Biennial Convention, attended by 10,000 nurses from every section of America, was held in Philadelphia. The above is a street snapshot of three of the faithful from North Carolina. From the reader's left they are Miss Elizabeth Moore of the Wake County health department, Miss Theodosia Fludd, supervising nurse in the Cumberland County department, and Miss Mabel Patton, consultant with the State Board of Health.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly **THE HEALTH BULLETIN**, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
 Appendicitis
 Cancer
 Constipation
 Chickenpox
 Diabetes
 Diphtheria
 Don't Spit Placards
 Eyes
 Flies
 Fly Placards

German Measles
 Health Education
 Hookworm Disease
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 Malaria
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Scarlet Fever
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 Tuberculosis Placards
 Typhoid Fever
 Typhoid Placards
 Venereal Diseases
 Vitamins
 Water Supplies
 Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care
 Prenatal Letters (series of nine monthly letters)
 The Expectant Mother
 Breast Feeding
 Infant Care. The Prevention of Infantile Diarrhea.
 Table of Heights and Weights

Baby's Daily Time Cards: Under 5 months; 5 to 6 months; 7, 8, and 9 months; 10, 11, and 12 months; 1 year to 19 months; 19 months to 2 years.
 Diet List: 9 to 12 months; 12 to 15 months; 15 to 24 months; 2 to 3 years; 3 to 6 years.
 Instructions for North Carolina Midwives.

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Annual Report North Carolina State Board of Health to Conjoint Session State Medical Society

By CARL V. REYNOLDS, M. D.
Secretary and State Health Officer
Pinehurst, May 15, 1940.

IT has been only one year since the last report was given, but as the River of Time carries me on, I look back and marvel at the progress made in the activities of your health departmental divisions. It is only fair that credit be given to your board of directors; division directors, and the general personnel for the enviable advancement made—it could not have just happened. They gave much of themselves, and it took vision, courage, resourcefulness, as well as the opportunity to have accomplished so much in so short a period. Then, it is with a justified pride that I place in review, a part of what has been done.

Last year you were given the amount of funds allocated under the provisions of Title V and VI of the Social Security Act, monies received from philanthropic sources, state, city and county allotments, and the allied agencies supplemental funds for malaria control, general sanitation, water and sewage, farm security projects, etc. This year these

Editorial matter is omitted this month to provide space for the publication of a portion of Dr. Reynold's Annual Report. The annual report of the State Health Officer to the conjoint session of the State Board of Health and the North Carolina Medical Society is required by law. The reports have always been interesting and instructive, and of considerable historical importance, and never more so than today.

funds have, in several instances, increased and in consequence, expanded their scope of usefulness.

Gentlemen, I repeat again this year, something is happening, and happening fast!

It seems to me, as the Executive Administrator of the funds under the policies of your Board, it is expedient that you become concerned, lest

the administrative responsibility may rest upon other governmental agencies. We can, through consultation, develop a wise program that will contribute to the advantage of all, and to the detriment of none.

In this day of rapid communication, one can no longer live unto one's self. City, county, state and interstate boundaries are so closely interwoven that our citizenry is one large community, and it is essential to the welfare of the whole that it be treated as such.

Our happy and more contented health family of 606 workers is fast becoming a recognized and essential unit of our social structure, and its

influence and effectiveness is being recognized and appreciated as never before in the history of time.

DIVISION OF PUBLIC HEALTH

One of the most far-reaching and outstanding advancements made in recent years was in Dr. J. M. Parrott's administration when he and his staff realized the importance of special training for the health officer before assuming his full-time duties.

The University of North Carolina, under the guidance of Dr. Charles S. Mangum, Dean of the School of Medicine, September 24—December 17, 1934, offered courses of study in Public Health Administration in order that immediate and practical needs of trained personnel in this State and Region might be adequately met. This service was made possible through the coordination of the facilities and the staffs of the Schools of Medicine and Engineering of the University and the North Carolina State Board of Health, the three agencies of the State which are concerned immediately with the problem of public health.

The staff of instructors at this time was composed of the division directors of the State Board of Health and Professors at the University of North Carolina. The names of the instructors were: Robert E. Fox, M. D., Director Division County Health work, State Board of Health; John H. Hamilton, M. D., Director Division of Laboratories, State Board of Health; Warren H. Booker, C. E., Director Division Sanitary Engineering, State Board of Health; Robert T. Stimpson, M. D., Director Division Vital Statistics, State Board of Health; Joseph C. Knox, M. D., Director Division Epidemiology, State Board of Health; George M. Cooper, M. D., Director Division Preventive Medicine, State Board of Health; Ernest A. Branch, D. D. S., Director Division

Oral Hygiene, State Board of Health; Daniel Allan MacPherson, Sc.M., Ph.D., Professor of Bacteriology, University of North Carolina; Arthur Russell Hollett, S. M. E., Instructor Civil Engineering, University of North Carolina; John Charles Geyer, S. M. E., Instructor Civil Engineering, University of North Carolina; M. J. Rosenau, M. D.

Students enrolled in the first course were: Dr. R. M. Bardin, Forest City, N. C.; Dr. B. B. Dalton, Raeford, N. C.; Dr. F. H. Garriss, Windsor, N. C.; Dr. A. D. Gregg, Liberty, N. C.

This meritorious step placed North Carolina in a position to secure, and she did secure, the Regional School in the Second District, financed in the beginning by the U. S. Public Health Service from funds and scholarships coming out of the ten states within the district.

Our greatest handicap to efficiency was the lack of qualified personnel to man the fast growing demand for county health departments; and, the desire of the politicians to make political appointments to be politically controlled. Politics and public health are incompatible in administration. So it was, to raise our standards that we set up standards for the establishment of qualifications for professional personnel and certain classes of professional employees.

The object of the Division of Public Health in the beginning was to offer comparatively short courses best adapted to equip physicians for the special responsibilities of health work. The curriculum covered a period of twelve weeks and included intra-mural instruction, laboratory exercises, health surveys, and field work.

In 1936, a Division of Public Health was established and a Director, Dr. Milton J. Rosenau, appointed. The University of North Carolina, at

Chapel Hill, was designated and approved by the United States Public Health Service as the center for the training of health officers for the Interstate Sanitary District No. 2, extending from Delaware to Florida, to carry out the provisions of the Social Security Act for the training of public health personnel. A Field Demonstration Unit was established in the Orange-Person-Chatham District Health Unit in cooperation with the City-County Health Department of the adjoining County of Durham for the purpose of giving trainees practical experience in rural and urban health administration.

Students are enrolled in the University of North Carolina and enjoy all the rights and privileges of the general student body. They may take courses in other departments of the University, provided they are properly qualified and have the approval of the Administrative Committee. Certain courses in economics, political science, sociology, social work, and statistics are regarded as having an especially close relationship to public health.

The administration reserves the right to refuse admission to any student who, in its judgment, is not qualified to profit by work in the Graduate School, to limit the number of students admitted to any course, and to drop from the roll any student whose work it deems unsatisfactory for any reason. All applications for admission will be assumed to have assented to these conditions.

Graduate degrees offered by the Division of Public Health are administered by the Graduate School of the University of North Carolina. These degrees are: Master of Public Health (M.P.H.), Doctor of Public Health (Dr. P.H.), Master of Science (with designation) (M.S.),

Doctor of Philosophy (with designation) (Ph.D.).

All requirements concerning these degrees are administered by an Administrative Committee of the Graduate Division of Public Health with the approval of the Administrative Board of the Graduate School.

The Certificate of Public Health (C.P.H.) is not considered a graduate degree and is, therefore, administered by the faculty of the Division of Public Health in the School of Medicine.

The faculty of the Division of Public Health for the session of 1939-'40 consists of the following:

Faculty

Milton Joseph Rosenau, A.M., M.D., Professor of Epidemiology; Herman Glenn Baity, A.B., S.B., in C.E., S.M., Sc.D., Professor of Sanitary Engineering; Daniel Allan MacPherson, Ph.B., Sc.M., Ph.D., Professor of Bacteriology; Harold William Brown, A.B., M.S., Sc.D., M.D., Dr. P.H., Professor of Public Health; James Clarence Andrews, B.S., Ph.D., Professor of Biological Chemistry; John William Roy Norton, A.B., M.D., M.P.H., Professor of Public Health Administration; William LeRoy Fleming, B.A., M.S., M.D., Research Professor of Syphilology; Daniel Franklin Milam, A.B., M.D., C.P.H., Research Professor of Nutrition; John Joseph Wright, A.B., M.D., M.P.H., Research Professor of Epidemiology; Michael Arendell Hill, Jr., A. M., Associate Professor of Mathematics; Carl V. Reynolds, M.D., Associate Professor of Public Health; William P. Richardson, B.A., M.D., C.P.H., Associate Professor of Public Health Administration, in charge of District Health Department; Harold Benedict Gotaas, B.S. in C.E., M.S., in C. E., S.M. in Eng'g., Assistant Professor of Sanitary Science; Albert John Sheldon, B.A., M.A., Sc.D., In-

structor in Public Health; Sterling Brackett, A.B., M.A., Ph.D., Instructor in Public Health.

Number and Classification of Students—Division of Public Health

	Health Officers	San. Engi- neers	Sani- tarians	San. Offi- cers	Special Students	Total
1935 7						
Spring-1936 14	12	14	4	6	50	
Fall -1936 15	10	12	3	6	46	
Spring-1937 19	12	6	9	7	53	
Fall -1937 19	4	8	4	5	40	
Spring-1938 19	5	8	6	10	48	
Fall -1938 13	8	11	4	6	42	
Spring-1939 14	4	3	2	6	29	
Fall -1939 14	5	9	1	6	35	
	134	60	71	33	52	350

The faculty consisting of 8 full-time Professors, devoting their full time, thought and energy to Preventive Medicine; 8 Associate Professors at the University of North Carolina; 4 Research Fellows and assistants, with 19 other lecturers, constitute an institution of unsurpassed facilities.

Today, we are proud to announce to the world that here in North Carolina there is one of the best, if not the best, Public Health Schools in the country.

HEALTH EDUCATION IN OUR SCHOOLS

It is fundamentally sound that every child should be morally, mentally and physically fit to compete for his place in this world. The teaching of health and health habits, in its broader sense, is the objective in establishing a course of Public Health Education in the public schools of North Carolina. It was for this purpose that the forces of the State Board of Health and the State Board of Education have united in the development of a unified health service in the public schools of the State, both white and colored, including Health Education, Physical Education, Public Health Supervision, etc. The initial coordinating agency consists of an advisory committee

and a full-time operating staff, the latter under the direction of a State Coordinator of school Health Education and school health services. The committee is composed of three appointive members and two ex-officio members. The functions of this committee are to act in an advisory capacity to the coordinators, Dr. John F. Kendrick and Dr. Walter Wilkins, and its individual members guide and assist them as technical experts in the formulation and execution of a unified school health program. The present members of the committee are: Dr. J. Henry Highsmith, representing the State Department of Education; Dr. Geo. M. Cooper, representing the State Department of Health; Mr. O. K. Cornwell, representing the Department of Physical Education, University of North Carolina; Dr. C. F. Strosnider, representing the State Medical Society; and Dr. J. R. Slay, representing State Teacher Training Schools. The coordinator selects all other personnel subject to the approval of the State Health Officer and the State Superintendent of Public Instruction.

Through this group consisting of coordinator, nurses, physical educator, nutritionist, and a small unit consisting of a colored physician, Dr. Walter J. Hughes and a colored health education worker, Mrs. Irma Neal Henry, working in the colored schools, with the support and aid of the county health officers and their personnel, we hope to bring about more effective team work between the State Board of Health, the Board of Education, the local boards of health, and in the educational formulation and execution of a school health program which will meet more adequately the needs of the State.

When we think of the school population as a whole, there are few fun-

damental defects that inhibit mental and physical development. To the contrary, there is a large percentage that can, through prevention, correction and cure, become leaders, instead of drones, in the school group. This cannot be accomplished through a routine examination by the school physician or nurse finding the defects and not being able to remove them. This removal can be accomplished only through the education of the individual to realize and appreciate the value of health to the extent of seeking relief rather than being coerced into having the corrections made.

Twenty-five thousand teachers in our schools teaching 900,000 children know how to teach but at the moment many do not know what to teach. Give them this opportunity of Health Education and they will be able to apply their knowledge with greater effectiveness to the student body.

To my mind, this is a great advance in public health progress, and its success or failure will depend upon the resourcefulness of the Coordinator and the whole-hearted cooperation of the county health officers, the superintendent of schools; and last, but not least, the willingness and enthusiasm in which the teacher and public enter into the program.

Such a plan, will, I believe, give us a continuity of service with the least effort and best results.

The soundness of this procedure has been confirmed in 144 schools in four counties within the State by the experience of our staff of the North Carolina School Health Coordinating service, extending now over a period of a school year. To speed up the effectiveness of such a program, there has been set up a proposal for the provision of courses in our School of Public Health at the University of North Carolina providing adequate health instruction

for in-service and in-training teachers. We anticipate such a course to be made available by supplementing the facilities now available at the University of North Carolina by the provision of additional staff members thereby making it possible to establish a complete course in Health Education available to students and teachers during the winter and summer sessions.

PUBLIC HEALTH NURSING COURSE

We are contemplating a course in Public Health for nurses to be given under the direction of the Division of Public Health of the University of North Carolina. Many of the courses for nurses are now available at the University in the Division of Public Health and other departments. The courses have been carefully considered as to content and in every case the course will be given by a teacher of outstanding ability.

The new courses introduced into the curriculum would not require a prohibitive expenditure to enable us to give the only course in the country which would be given by a full time staff of university calibre. We hope to be able to offer this course to the public health nurses by the fall of 1940.

COOPERATIVE NUTRITION STUDY

Our knowledge of the scientific fundamentals of nutrition, the value of the protective foods—the lack of which causes “deficiency diseases”—as against the foods to supply our energy needs, has advanced to such an extent that we should put our existing knowledge into practice.

We have done much in preventing the preventable, and in curing the curable in infectious diseases, but let's be specific—what have we done in a concerted effort toward preparing

our bodies to resist infection through natural forces?

Through dietetics we can do much in this field, yet scarcely touched. In order to best fortify our bodies we must familiarize ourselves with the qualitative as well as quantitative dietary essentials indicated in the various stages of body needs for development and replacement, and resistance against diseases.

From these data it is natural to conclude that health education should be more securely entrenched in the school curriculum and certainly food, and food values have become a basic science of such importance in the establishing of a sound body, and in the preservation of health and the prevention of diseases, that it should take a prominent place in our educational programs in the schools, in our health departments' preventive program, and among the physicians as a preventive, corrective, and curative administrative procedure.

We have learned that an impoverished soil means impoverished foods. If the soil lacks essential food elements, the foodstuffs grown on it may show a similar qualitative deficiency.

There are diseases known to us all that can and should be prevented by proper diet, but pause for a moment and think of the sub-clinical dietary diseases, far greater in number than those severe enough to be clinically recognized, but, that eventually lead to degenerative diseases.

Since 1937 we have been thinking of ways and means to combat this much neglected problem and naturally we are very happy indeed to report to you today the advanced steps taken which we believe will lead to great possibilities.

Financed from outside sources, we have been able to set up under Dr.

D. F. Milam, a member of the staff of the International Health Division, Rockefeller Foundation, the State Board of Health, and Duke University Medical School where trained biochemists and physicians would be available for work on these nutrition problems, a cooperative Nutrition Study which was begun in North Carolina January, 1940, having for its object the assessment of the nutritional status of various sections and groups in the State and the devising of plans for the betterment of the dietary of the people by widespread diffusion of knowledge about nutrition and opportunities for improvement.

The three cooperating agencies selected a community near Duke University for investigation. There was a technical committee of four members organized to fix the methods and procedures to be followed by this study and to appraise results. This committee was composed of Dr. J. M. Ruffin, clinician; Dr. W. A. Perzweig, biochemist; Dr. J. W. Dann, physiologist and Dr. D. F. Milam, epidemiologist. In addition to this small committee there was organized a general nutrition committee to have general supervision of policies. This committee has had a meeting with representatives attending from the State Health Department; Department of Education; Department of Agriculture; Department of Welfare; Duke University; the University of North Carolina; North Carolina Woman's College; North Carolina State Medical Society and the Rockefeller Foundation. The representatives were enthusiastically interested, and at this meeting there was set up sub-committees from each department above named to determine in what way they could best serve in making more effective this nutritional study and in what

way they could participate in perfecting the organization's objectives.

Many families are being studied after having had a painstaking physical examination, and placed on a seven-day food intake, carefully supervised daily by a competent dietitian for each individual family member. The records are kept.

At the time of the physical examination a 25 cc. sample of blood is drawn and oxalated. From each red cell count, hematocrit, hemoglobin, total proteins, albumin, phosphorus, phosphatase, Vitamin C, Vitamin A, are made. Also X-ray pictures of the wrist and ankle are made.

Naturally, we are in the beginning of a very important study, the appraisal of which will be made later. We firmly believe that the outcome of this study will bring to us valuable information and it will be the beginning of one of the most important activities, with far-reaching results, that has yet been started in our preventive program.

NEW PLANT FOR THE STATE LABORATORY OF HYGIENE

The April, 1940, issue of *The Health Bulletin* published by the North Carolina State Board of Health was sent to each member of the North Carolina Medical Society, as well as to about 48,000 other citizens of the State, setting forth, more or less in detail, the dedication of our new Central State Laboratory of Hygiene Building located on Caswell Square, and the State Laboratory of Hygiene Farm. I hope you gentlemen will file this number in your library for it is of exceeding historical value.

I quote a paragraph from Dr. G. M. Cooper's editorial of the April issue:—"Once again the April issue of *The Health Bulletin* becomes a medium for recording events in State Health work of great historical im-

portance. This issue in the years to come should be of increasing interest to all students of the State's progress. It records complete success in the latest and largest item in material advancement yet made in the constant struggle to make the whole State a more desirable domain in which its people may live and work."

For a more complete description, I am also quoting what Dr. John H. Hamilton, Director of the Division of Laboratories, had to say as to ways and means of the completion of the buildings and a bird's-eye review of the uses of each.

"February 28, 1940, was the official completion date of the building program for the State Laboratory of Hygiene. These new buildings were made possible by the issue of \$160,000.00 of Revenue Bonds and the allocation of a Public Works Administration Grant of \$130,909.00. The acquisition of funds from various sources brought the total cost up to \$308,000.00.

"The plan consists of the Central Laboratory Building on Caswell Square, 214 West Jones Street, which was dedicated on February 21st, as the Clarence A. Shore Memorial Building and the Laboratory Farm, located on U. S. Highway Nos. 1, 64 and 70, six miles west of Raleigh.

"The Central Laboratory Building consists of four stories. On the first floor are located the mailing room, the media preparation room, the dish-washing and sterilizing room, a store-room, a small animal room and a machine shop. On the second floor are the business offices, the library, the water laboratory, the auditorium and the microscopic examination laboratory. On the third floor are found the filing room, the laboratory for serological examinations for syphilis and the bacteriological examinations. The fourth floor is

devoted to the preparation of typhoid vaccine, pertussis vaccine, diphtheria toxoid, Schick Test material and the latter stages of the preparation of smallpox vaccine, diphtheria and tetanus antitoxin.

"The State Laboratory of Hygiene Farm consists of approximately 280 acres, 80 acres of which is under cultivation—200 acres in woodland. The farm has a frontage of 1,550 feet on three National Highways and two railways. On this farm are located the farm laboratory building, two horse barns, one sheep barn, two small animal buildings and a smallpox vaccine building, a root storage cellar and several wooden sheds. On the farm will be carried out the preliminary preparation of our antitoxins, our rabies vaccine and smallpox vaccine. The small animal buildings will make it possible for the laboratory to produce the guinea pigs, rabbits, mice and other small animals which will be needed in routine operations. It will also be

possible to grow on the farm the feeds best adapted to the needs of our animals.

"The physical plan of the State Laboratory of Hygiene will make it possible to increase personnel, improve services and extend activities if funds are available for these purposes. It is so designed that it does not necessitate the employment of additional personnel for its operation if no greater amount of service is to be rendered than the laboratory has been rendering in the past—in fact, certain economies may be effected which were impossible in the past.

"The laboratory as an institution faces the future with the hope that its services may be in keeping with its traditions of the past, as well as the facilities made possible by its new physical plant."

Editor's Note: The balance of Dr. Reynold's interesting report, dealing with individual reports of the several divisions of the State Board of Health, is omitted here for lack of space.

Temperature Control in Air Conditioning

By M. FRANK WOOTEN, JR., Consulting Engineer, Charlotte, N. C.

THE subject of temperature control in air conditioning as it relates to the health and comfort of the human body is a rather involved subject. It must necessarily deal with heat generation within the body (metabolism), heat losses from the body by radiation, conduction and evaporation and with other factors, such as air movement and humidity changes, which have a direct influence upon the body. No attempt will be made within the limits of this short article to do more than briefly outline some of the ill effects which moderately extreme conditions will have upon the human body. The reader will be able to modify these extremes in his mind and bring

them within his own range of normal temperatures. It is the hope of the author that interest will be stimulated and further reading done.

The major objective of air conditioning is to arrive at an average condition which will be suited for the maximum comfort and health of most of those within the space. To arrive at this average many factors must be considered and each weighed in relation to the others. As an example, the degree of activity is an important factor. The heat generated within the body of a person who is exercising violently may be five times as great as when he is reclined and at rest. This extra heat generated must be given off as

rapidly as it is produced or the body temperature will rise above the "normal" of 98.6°F. It is easy to see from this that certain temperature conditions may be best suited for one set of conditions and may not be at all suitable under other circumstances. A great deal of the condemnation which is heard about certain air conditioning systems is due in part to a lack of regard for, or utter disregard of, the local conditions. To say that any certain temperature is best suited for all conditions and persons is impossible, unless, of course, the types of places and the persons are similar.

The body temperature during normal health depends upon the delicate balance between heat produced within the body (metabolism) and the heat losses from the body. Then, since there is always a certain amount of heat being produced in the body, the body must be cooled at all times regardless of the surrounding temperature. However, the rate of this cooling must be very delicately controlled. Nature does this during the average temperatures largely by regulating the skin and surface tissue temperatures according to the temperature of the surrounding air and objects. (Natural laws tell us that heat will flow from the warmer to the cooler objects and that the rate of this flow will be governed by the difference in the temperatures). It is due to this direct influence on the body that temperature control and temperature variations of the air is important.

Nature has arranged to vary the surface temperature of the body by regulating the blood circulation. During warm temperatures a large percentage of the blood is concentrated at the surface to be cooled. During colder temperatures the blood is drawn in to the deeper tissues to

avoid chilling. Neither of these extremes are good. The condition best suited for good health is that in which the blood is equally distributed between all parts of the body. The unequal distribution of the blood between the surface and deeper tissues can, and does, have a serious effect on the body.

Most people realize that this redistribution of the blood takes place. They have seen the blood brought to the surface of their bodies under certain conditions. They know, too, in a general way, the serious affects which may result if they are exposed to low temperatures for certain periods of time. But there are few who realize the serious effects which high temperatures may cause.

Fortunately the body is able to adapt itself to the higher temperatures up to a certain point without serious discomfort or injury to the health. This is done by making a chain of physiological adjustments. However, above this high point the regulation begins to fail and a vicious cycle begins to take place. Heat is not given off from the body as rapidly as it is produced. Part of the heat is retained in the body, causing an increase in body temperature, an increase in the heart rate and more rapid respiration. In the higher body heat the metabolic rate is increased and the vicious cycle of increased heat production and inadequate heat losses takes place.

However, the very high temperatures are not usually encountered. Our chief concern is usually during the moderately high temperatures. With these, there are very definite ill effects which result from the diverting of the blood from the vital internal organs to the surface tissues. As the blood is diverted there is a partial starving of the various vital organs. The stomach loses some of its

ability to act upon the food as it should as a direct result of this "starving". There is a decreased secretion of the gastric juices and a corresponding loss in the antiseptic and antifermentative action. Such a condition causes loss of appetite, favors growth of bacteria in the intestinal tract and is considered to be a factor in the increased susceptibility to gastro-intestinal disorders during hot summer weather.

The brain, like the stomach, is partly starved and the feeling of lassitude encountered during warm weather is a direct result. If the exposure is prolonged and the temperature rather high, the results may be known as heat stroke or by some other similar term. The strain on the heart as it forces the blood to the surface is said to be from 40 to 63 percent greater during high temperatures. Obviously none of these conditions are inductive to good health and are conditions which may go so far as to cause serious illness or even death.

The deleterious physiological effects of high temperatures have a marked influence on physical activity, efficiency, accidents, sickness and mortality. The incidence of industrial accidents has been compared to temperatures and is looked upon as a representative example. It is in-

teresting to note that there was a very definite relation. The incidence reaches a minimum at about 68°F. and increases both above and below that temperature.

From these very brief observations it is reasonable to say that temperature control, as one of the several functions of air conditioning, does have a definite influence on the human health, comfort and activity. However, it must be remembered that, while temperature control is important, it is only one of the four functions of air conditioning as described in the first article of this series. Temperature control is closely connected with the control of air movement and with the moisture content, or humidity, of the air. This interconnection is partly due to the fact that the evaporation of moisture from the skin is one of the methods which nature uses for cooling the body. The rate of this evaporation, of course, depends upon the amount of moisture already in the air and upon the movement of the air. Each of these functions has a direct bearing upon the health, comfort and happiness of those within the space and each must receive its proportional share of consideration. In a later article another one of these functions of air conditioning and its relation to the health and comfort of the human body will be discussed.

Applied Public Health Education*

By A. H. ELLIOT, M. D., Health Officer, Wilmington

FOR a long time it seemed next to impossible for me to decide on a subject for this occasion. Finally I decided to look back and see what some of our former presidents had written about—thinking that something some of them had said might suggest something about which I

could write.

In the preparation of papers for occasions like this, the writer usually tries to strengthen his discussion by quoting men of national or worldwide reputation and by presenting figures and statistical data compiled by accepted authorities. In many

cases the men quoted have been seen by few if any of the listeners. My efforts are going to be a marked departure from such a procedure. I am going to quote some of our own health officers because after glancing over several of our former presidents' addresses, I decided it might be interesting and worthwhile to review briefly some of their outstanding suggestions and recommendations; and then see to what extent such recommendations may have been put into operation.

A glance at the last eight or ten presidents' addresses will naturally show able discussions of many subjects—such as sanitation, immunization, maternity and infancy work, the formation of district health units, venereal disease control, and public health education.

The one subject most frequently discussed was that of public health education.

In practically all our health departments, sanitation, immunization, and maternity and infancy work represent jobs already well done. About all that we have to do here is to keep up the slack in our every day routine.

One of our former presidents gave most of his time to the discussion of the formation of district health units—each district to take care of several counties and be under the general supervision of the State Board of Health. He compared such a system to the then already established state-wide systems of public schools and public highways. He should take great pride in having lived to see his proposal provide an excellent health service in many of our poorer rural counties which might not have had any kind of health service had it not been for some such arrangement. Surely none of us begrudge him the honor and re-

ward of being at the head of one of these districts.

The venereal disease problem was referred to by a number of our past presidents. They have repeatedly called our attention to the fact that this group of diseases constitutes a major public health problem. They accordingly have urged that we make a concerted drive against them—especially against syphilis. Any comment as to the extent to which such recommendations have been put into operations would be superfluous. Instead, may we simply pause (1) to thank Dr. Thomas Parran for initiating the idea; (2) to express our gratitude to Uncle Sam and the late Smith Reynolds estate for the money; and (3) to commend our state health officer and our state epidemiologist for making it possible for every health department in North Carolina to have many adequately equipped and scientifically conducted syphilis clinics.

Back in 1931, our president favored us with a very short address. He called our attention to the inadequacy of our efforts and accomplishments along many lines; then asked "What can be done about it?" He suggested several things that could be done, chief of which was "Establish a comprehensive alliance of public health and public education". Under this alliance, he proposed to "eliminate unhealthful school environments, give teachers training in school health management, and attack malnutrition in the elementary grades by supervised lunch and by feeding concentrated vitamins to all underweights."

The very next year the subject of public health education received further attention. This writer thought not in terms of the public schools but in terms of mass education. He said "With the many organizations in existence at the present time that

are ready and willing to undertake definite projects, the public health worker has excellent opportunity to ally these agencies with him in such a manner that great good may be accomplished and at the same time tie up all the forces in the community under one leadership rather than have them work as independent agencies with confusion and overlapping resulting. Women's clubs, parent-teacher associations, civic clubs, and other agencies afford excellent opportunity for mass education concerning matters of health."

This same former president went further and referred to another and very special form of public health education. His exact words are "Somewhat with fear and trembling I now propose to present a matter which is not new by any means to many of this group. Informal discussions for many years have been heard concerning the desirability of a school of public health in connection with some of our institutions of higher learning. A big undertaking of course, but who can say that such an accomplishment is not possible if given encouragement by those who should be most interested. The majority of health department personnel of our state at the present time are recruited from the professions and the laity who have not had special public health training. It occurs to me that it would be a fine and noble thing for those of us who are now fighting the battles in the health departments of the state to lend ourselves to such a movement in order that those who are to follow after us may have an advantage which we do not enjoy."

At our Asheville meeting in 1936, we had an unusually good paper on public health education—not by a former president nor by a health officer. It was by a county superin-

tendent of schools. Many of his expressions might well be repeated today. I will quote a few of the most significant of his ideas. The very title of his paper was "Public Health Will Come Through Public Schools". He says for a health officer to do effective work he "necessarily becomes a health educator in the hope and with the reasonable expectation that he will be able to guide public thought into his own channel of thought and into his own plan of action". This plan reaches all children, rich and poor, white and black. It reaches them in their formative years. They should be let to form the "habit" of healthful living. His idea is that we should teach teachers the fundamentals of public health and then use them as deputy health officers. In this connection he wisely cautioned us as follows: "Should teacher training institutions begin this type of work, let us remember to insist that we keep too much theory out of the process. Also let us insist that the teachers themselves be examples of health and that they become proficient through the laboratory method rather than through the lecture method." The same principle is to be applied to the school buildings and facilities—sanitary toilets, hand-washing facilities, proper cafeteria equipment, and well-balanced diets are just as essential in such a program as chemical reagents, weights, and measures are in the chemistry and physics laboratory.

The school of public health at Chapel Hill under the masterful leadership of Dr. Rosenau must far exceed the fondest hopes of any of us back in 1932.

One more comment in retrospect will bring us up to the present. Those of you who attended our annual banquet about three or four years ago, will remember that one of our

members made an earnest speech in favor of changing our title from "Health Officer" to "Superintendent of Health". He wanted the change because he supervised health affairs and objected to the term officer because it implied police duty or law enforcement—which, of course, was beneath the dignity of his position. One experienced health officer arose and commented that if "Health Officer" were the worst thing he was ever called he would be satisfied!

All of this is to remind ourselves that in one respect at least that is exactly what we must be. I refer to the new diphtheria immunization law. For several years we undoubtedly will have occasion to be law enforcement officers or else the last legislature's efforts for diphtheria control will have been in vain. Each health officer should keep a special birth record book. On this book should be recorded every immunization prior to the age of twelve months. All children not immunized by the time they are twelve months old should receive immediate attention. Shall we say unimmunized children should first receive our superintending attention and then if not immunized, should receive our health officering or police attention. It is my sincere belief that if this work is done thoroughly for a few years there will be little trouble after that, but if immunization is left to the parents there will be very little if any change in our diphtheria morbidity and mortality.

All of us are aware of the fact that North Carolina is starting out on a most ambitious program of work among the school children—with the help of the teachers. This is as it should be and all of us should help as much as possible.

Routine inspections and physical examinations will naturally be an important part of this program. However, after one thorough examination of a child has been made and the necessary corrections recommended, further routine examinations at measured intervals are useless if the corrections have not been made—and most probably will be unnecessary if the corrections have been made. More correction of defects and less routine weighing and measuring should be our motto here.

The school buildings and facilities must be such that the children can see every day the very things that their teachers are telling them about sanitation, ventilation, lighting, and balanced diets. Again, in the words of our school superintendent, they should, under such teachings and surroundings, develop the "habit" of healthful living.

The only plea that I make is that this work be full of horse sense and relatively void of theory. Most of us may have forgot all of our mathematics and anatomy, but we all remember the terms "applied mathematics" and "applied anatomy". Is it asking too much of the departments of health and education to ask that this school work be in reality "applied public health education"?

If it is the president's privilege, I would like to make one special recommendation. That is, that we try at all times to use common sense and be practical. I do not mean that we should be indifferent or lax in the performance of our duties, but I do think that we should go about our duties in a business-like manner. If we do not have the confidence and respect of the people with whom we work we cannot expect much cooperation; without their co-

operation we are doomed. Good business men have little tolerance for extremists, idealists, or theorists. Whatever our objective may be, our

approach should be on a plain, practical, and understandable basis.

*President's Address, N. C. Public Health Association, Pinehurst, May 13, 1940.

Vincent's Infection Reportable

ON December 16, 1937, at a meeting of the North Carolina State Board of Health, Vincent's Infection was made reportable. Following is an excerpt from the minutes of the meeting:

"Doctor Johnson read a portion of an article sent out by the American Dental Association in reference to Vincent's Infection, stating that it was reportable in 15 states, namely: Colorado, Illinois, Indiana, Iowa, Maine, Michigan, Minnesota, New York, Nevada, North Dakota, Oregon, Washington, West Virginia, Wyoming and Florida.

"Doctor Johnson moved that Vincent's disease be made reportable. The motion was seconded by Doctor Dixon and carried unanimously."

At a meeting of the State Board of Health on January 12, 1940, a regulation was passed which requires exclusion from school of teachers and pupils and the exclusion from employment of food handlers suffering from the disease. Following is an excerpt from the minutes of the meeting:

"A motion was made by Doctor Johnson that 'all teachers and pupils suffering with Vincent's Infection shall be excluded from the public schools of the state until they have received treatment for same and reported free of the infection by a person regularly licensed to practice medicine or dentistry in North Carolina before being re-admitted to the schools of the state'.

"That all food handlers suffering with Vincent's Infection shall be excluded from employment while infected with Vincent's Infection until he or she has received treatment for same and reported free of the infection by a person regularly licensed to practice medicine or dentistry in North Carolina before resuming his or her duty in the state."

"Motion seconded by Doctor Ward and carried unanimously."

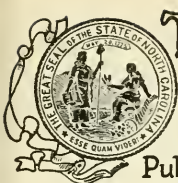
DISTINGUISHED VISITORS

The Editor was much pleased to have a visit from an old friend, Dr. Guy Harrison of Richmond recently. Dr. Harrison is a member of the Virginia State Board of Health, and has probably served longer in that capacity than any other dentist in the United States.

In February Dr. Robert Aiken of Vermont; and in March Dr. J. L. Jones, State Health Commissioner of Utah; Mr. Carl Warkentin of Oklahoma, and Mr. Robert Lam of Hawaii, were guests of the State.

Dr. Mariano M. Herbosa, of the Phillippine Public Health Service, was a June visitor to the North Carolina State Board of Health, making a study of methods employed in the various divisions here.

Dr. Kuh-waung John Lieu, who is a Rockefeller Foundation fellow from Shanghai, China, visited the State Board of Health in June. Dr. Lieu is on the Municipal Health Department staff in Shanghai.



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PHYSICIANS ATTENDING SCHOOL

The above photograph represents less than one-third of a group of North Carolina physicians who attended a post-graduate course in Obstetrics and Pediatrics at Wrightsville Beach, June 24. About 150 physicians attended the Symposium at Wrightsville and a similar one held June 17 at Roaring Gap.

A large number of physicians in North Carolina are earnestly cooperating with the Maternal and Child Health Service of the State Board of Health in a determined effort to reduce infant and maternal deaths in the State.

—Photo Courtesy Wolff-Gruehn.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly **THE HEALTH BULLETIN**, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	German Measles	Scarlet Fever
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SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Baby's Daily Time Cards: Under 5 months;
Prenatal Letters (series of nine monthly letters)	5 to 6 months; 7, 8, and 9 months; 10
The Expectant Mother	11, and 12 months; 1 year to 19 months
Breast Feeding	19 months to 2 years.
Infant Care. The Prevention of	Diet List: 9 to 12 months; 12 to 15
Infantile Diarrhea	months; 15 to 24 months; 2 to 3
Table of Heights and Weights	years; 3 to 6 years.
	Instructions for North Carolina Midwives.

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THE Health Bulletin

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Notes and Comment

By THE EDITOR

THIS is an editorial on national defense. Today the whole country is aroused as it has never been before to the needs for protection not for next year or the year after, but for today. In the opinion of this humble scribe, it is high time that the people of the United States become aroused to the necessity of defending our heritage, bought with the blood of our ancestors.

When a burglar sticks his flashlight and his pistol in your face in the middle of the night and arouses you from sleep, demanding your life or your valuables, and probably both, it is too late for you to get up and go and wake up a hardware dealer and buy a shotgun and come back and shoot the burglar. That is just the situation that about ten of the smaller nations around Germany have found themselves in during the last two years. It is the situation to a great extent that our country would find itself in today should the military masters of Germany decide to come on and mop us up along with the other saps living around them and trusting to their lying assurances of peaceful intentions. A burglar never has a peaceful intention and Germany is the great international burglar of all time. They have taught bank robbers and stick-up artists things that

will take them a thousand years to learn all about. They have taught them the art of murder and larceny in a way never before dreamed of.

The defense of our country depends not only on weapons of warfare, mechanized armies and well equipped navies with unlimited battleships and airplanes, but our defenses will largely depend upon the training of our manpower to man these mechanical instruments of warfare.

Nearly twenty-five years ago the writer of these lines in the columns of THE HEALTH BULLETIN, through the daily papers of this State, and on the platforms of schoolhouses in every county in North Carolina, specifically pointed out that Germany and Japan at that time for a quarter of a century had had a complete system with cross-indexing of medical inspection of school children in both countries. The military masters of both Germany and Japan, who have for the last half century ruled both countries with an iron hand, or rather under an iron heel, and both of whom determined to dominate their sections of the earth, have worked day and night to build up the physical stamina of their population. They have worked on the young folks. Physical training has been one of the principal requisites of every school teacher, and they have actually commenced on

the babies and kept it up until the males of the species were able to join their respective armies. This training has embraced everything that goes into the making of an alert soldier. Naturally, the physical stamina of the whole population has been attended to. Those two countries were the first on the earth to devise and put into widespread effect physical examination of school children and pre-school children with the medical, dental and surgical attention necessary to remove any physical defect. They have been among the first countries in the world to utilize immunization against diseases of every kind, and today their armies are running rampant over all of the earth.

For this last quarter century the writer has been constantly urging the people of our State to train for positive physical health and to do this on a systematic, scientifically designed and scrupulously carried out plan. This work is one item of development in a democratic country which can be carried out without sacrificing any part of an individual citizen's liberty, freedom of speech or freedom of action, and it is a thing that will contribute to more successful living, longer life and greater happiness of the family and the country than could be achieved by any other efforts.

In the *New York Times* of May 5 the writer was struck with a small news item headed "Nazi Health Center." The item described the campaign even now under way in Germany, with the nation at war with several other countries, still finding time to catalog the facts about the physical condition of every one of the eighty million inhabitants of Germany at that time. The paper stated that it is the ultimate goal for that nation to have a complete index of the state of health of every individual in the country, eighty million of them, on file throughout their entire nation.

They cover every factor, such as food, family history, drinking water, etc. All of these charts, one for every individual, is filed in a central statistical office at the health bureau of that war-mad nation. This indicates that they are not only planning for the completion of present conquests and the taking over of every other country on the Continent of Europe, but they are planning still further conquests throughout the earth. The only way to meet that is to be physically and mentally and morally prepared. While the people of many other countries, including our own, have been engrossed with easy living, with the six-hour day and the five-day week and all other such foolishness, and while our chief objectives have been easy living with plenty of eating and drinking, especially drinking, and a good time and to get more for less, these Germans have been remarkably sober and have been paying attention to hard living and the development of physical ability to conquer the world.

The only defense that this country can have is to prepare the physical stamina and the moral character of the people of this nation until the majority of the people in every community will have no trouble in realizing the fact that life without liberty is not worth having, but that to be retained it must be fought for, and the sick individual cannot fight.

Recently Dr. Reynolds, the State Health Officer, has sent out several newspaper challenges to the people of this State to extend and strengthen the citizens' efforts and desires all over the State to become better fit mentally and physically for the rights and privileges of citizenship and for the purpose of defending our State and our country when called upon in an effective and successful manner. Dr. Reynolds has insisted, and correctly so, that every

individual in the State should undergo physical tests and whatever might be found to be remedial in the way of physical defects should be immediately corrected. What is needed is a sober, working, God-fearing, healthy population for the protection of this land.

* * *

In a symposium on obstetrics and pediatrics recently held at Roaring Gap for the physicians of the north-western section of the State and at Wrightsville Beach for the physicians of the southeastern section, many highly important and interesting papers were presented. Such speakers as Dr. Julius Hess of Chicago, Dr. Ernest A. Schumann of Philadelphia, participated in the program. Many of the ablest obstetricians and pediatricians in North Carolina also made valuable contributions. More than a hundred and fifty physicians were in attendance upon these two post-graduate courses.

It is not the purpose here to single out for discussion any one paper. The papers were technical and prepared for doctors, and of course would not be understood or interesting to the average reader of *THE HEALTH BULLETIN*. We do, however, want to pass along a few comments about some of these items. Dr. Hess, for instance, emphasized something the editor of this column has been doing for many years, and that is if the infant death rate in North Carolina is to be lowered much below the present figures it can only be done through providing better obstetric attention for every woman at childbirth in this State. This applies particularly to the twenty thousand or more women, or one-fourth of all of our women, who depend on midwives or other inadequate assistance at the time of labor.

Another paper, which we are privileged to publish in this issue, by Dr. Aldert S. Root of Raleigh, urged the provision of free toxoid by the State Laboratory of Hygiene for every physician and health officer in the State if we may expect to eliminate diphtheria from North Carolina. This is something else the editor of this column has been urging for a long time. The State made very little headway in eliminating typhoid fever and smallpox until smallpox vaccine and typhoid vaccine was made freely available to all the physicians and health officers. There are many other factors, but this is the beginning point.

One other paper presented at Wrightsville in the symposium was by Dr. Charles P. Mangum of Richmond, Virginia. Dr. Mangum is a native North Carolinian and used to practice at Kinston. He is now a well known and successful pediatrician in Richmond, and the subject of his paper was "Pediatric Endocrinology." We wish to pass along one statement made by Dr. Mangum in discussing a point relating to dealing with so-called unruly children. It is well for every physician consulted by the parents of such children to bear in mind that statement of Dr. Mangum's. He was discussing hypothyroidism. This is the opposite from the usual complaint of hyperthyroidism. Dr. Mangum stated that there were a triad of symptoms which every mother and every physician should bear in mind in such children. First, extreme restlessness; second, destructiveness, accompanied generally by speech defects of some character. We are quoting this statement here in order to get it in the record because we frequently have fervent appeals from mothers of children from one to six years old seeking advice on those very points.

Dr. Mangum's paper is too technical for publication in the BULLETIN and would not be understood by the average reader, but some of the reminders brought out in Dr. Mangum's paper should be further emphasized. For example, "There must be some underlying etiological factor that makes it possible for little Willie to eat an egg and enjoy it while little Jimmie breaks out with an urticarial rash or wheezes with asthma if he attempts it."

Dr. Mangum closed his interesting paper with the following paragraph:

"What a bewildering kaleidoscope. Man, in health and disease, is still shrouded in mystery, still a paradox that defies reason and all the sciences that try to wrest the secrets from him. And long will it be before man knows man. 'The life so short, the craft so long to learn,' so sang Chaucer. Will it ever be learned?"

* * *

We are publishing next month an instructive but somewhat upsetting article by Dr. J. M. Arena of Durham. The title is "Poisons Kill Five Hundred American Children Every Year." The particular item of poison emphasized by Dr. Arena, as will be noted by reading his article, is lye poisoning. Lye has always been used extensively in the washing of clothes, scrubbing of floors and making of soap, etc. At the present time there is little excuse for it to be used. Other substitutes would be equally as effective. It is a violent poison. Often it does not kill outright, but the child suffers for weeks and months and has to be fed artificially and altogether presents a terrible picture. It is to be hoped that the next Legislature will outlaw the sale of lye under any circumstances. It does little good to comply with the present law of labeling when it is used by careless and indif-

ferent individuals and allowed to remain in the reach of crawling children.

We are also publishing the concluding article by Mr. Wooten on air conditioning. These articles of course have been interesting to every one and we feel sure many helpful suggestions have been offered by Mr. Wooten in the series.

* * *

The editor of THE HEALTH BULLETIN was somewhat amazed recently as well as shocked out of his shoes to read an advertisement in a local paper announcing the opening of a new market in Raleigh carrying only western meats for sale, meaning that the people of the Capital City, 46,660 of them, to say nothing of the six or seven thousand outside whom those inside want in so badly, can now buy their meats coming directly from Wisconsin, Kansas and Chicago and not defile themselves by eating western North Carolina beef and eastern North Carolina pork, the finest in the wide world, but can eat the western meat and therefore do their part toward keeping the farmers and stock raisers in North Carolina from finding a market for their home-grown livestock.

As Raleigh has a rather large percentage of State employees whose salaries are paid by the taxpayers of North Carolina and not by those in Wisconsin and Kansas and Chicago, it does seem, as it is a fact, that the local product when properly processed and marketed is far superior and more desirable, that these State employees at least would prefer to trade with the people who pay their salaries.

We have labored through these columns for a quarter of a century to urge the development of the livestock and dairying industry in this State as an aid to better health and prosperity for all of our people. Such items as this pre-

sents a discouraging picture. We have no objection to the interchange of manufactured goods or agricultural products throughout the whole country, but we do feel that everything else being equal, the livestock and farming interests of this State should be encouraged in preference to that of the northwest, when it would mean better health and more prosperity for thousands of our own citizens.

On going to press for this issue the editor is reminded by his friend, Dr. James M. Northington, Editor of *Southern Medicine and Surgery*, at Charlotte, of the fact that more people have been killed by fireworks on the Fourth of July celebrations in the United States than were killed in the eight years of the American Revolution, including deaths of soldiers in battle and by diseases in the army and all the other causes. This is an arresting statement, but of course is true. All but six states in the Union have some form of State regulation of the sale of fireworks, but North Carolina is one of the free and open states. In many states the use of fireworks has been totally prohibited except when the exhibitions were put on in the hands of experts. In this way the people have been protected from themselves.

Dr. Northington cites another common accident which right now in the month of August is at its worst, and that is the large number of deaths from drowning by people who are too careless when in swimming or on the water. Deaths from both of these items are utterly useless and all should be prevented.

* * *

The editorial comment in the June issue of THE HEALTH BULLETIN and Dr. Herring's article on deafness has produced rather widespread comment.

We have been informed that in at least two or three places the editorial was quoted over the radio from one or more of the local stations throughout the State. Dr. S. B. McPheeters, the health officer of Wayne County, informs the editor that he has made some careful calculations based on several years' experience and the examination of school children in Wayne County and the information he has procured from various sources there, Dr. McPheeters estimates on a conservative basis that it is costing Wayne County between twenty-five thousand and forty thousand dollars a year for the teaching of repeaters in the schools due solely to defective hearing. Wayne County could not be any exception to the average county in the State, and conditions there would be expected elsewhere in the State. It is undoubtedly costing a lot of money to teach these repeaters, but that is the least troublesome aspect of the problem. The fact that these children cannot obtain the benefits to be expected from a course in the public school, and the fact that they are to be sent out into competition in the world ill-fitted for making a living, maladjusted socially and in every way facing a gloomy future, is the important aspect to be considered by the school or parent. Intensive efforts over a long period of time beginning right now should be undertaken to single out all such children for special attention in the schools so that they may have their whole attitude toward life changed at this time, and so that they may receive at least some of the benefits of a public school education.

The editor is grateful to the people who have communicated their interest in this problem, and is encouraged to believe that much is going to be accomplished in the future for these children.

The Diphtheria Situation in North Carolina

By ALBERT S. ROOT, M.D., Raleigh

THOSE of us from North Carolina who attended President Hoover's White House conference in 1930 read with pride the figures thrown upon the screen which showed that our State, next to New York, had immunized more children of the pre-school age than any of the states of the Union.

This was in the earlier days of toxin-antitoxin administration. Then combined typhoid and diphtheria prevention clinics were held over the State by various health agencies—children over 6 years of age receiving typhoid vaccine and under 6 years diphtheria toxin-antitoxin. This enthusiastic start did not last long, and after a decade we find ourselves faced with the fact that during the past five years there have been 10,933 cases of diphtheria with 873 deaths reported in our State. During these five years the yearly number of cases and the yearly death rate have remained approximately the same. There are about 2 deaths per 100,000 in the United States as a whole, and between 5 and 6 per 100,000 in North Carolina. Dr. Joseph Knox of the State Board of Health pointed out in his paper before the N. C. Medical Society last year that nearly 7 per cent of all diphtheria reported in the United States occurred in North Carolina. We haven't stood better than 8th from the bottom of all of the states for a period of five years.

Our personal experience in this section around Raleigh has been discouraging. Dr. Charles Bugg and I have intubated 163 cases of laryngeal diphtheria during the past 15 years—36 of these cases had to be subsequently tracheotomized.

The mortality for the series was about 15 per cent. Of course these were

only part of the cases of laryngeal diphtheria which occurred within a radius of 50 to 75 miles from Raleigh. There were many others treated in other hospitals, especially the large number cared for at Duke University Hospital, and many died of "croup" before they could be hospitalized.

The situation in this vicinity is the same all over North Carolina. Diphtheria here differs in no wise from diphtheria in any other state, although our own statistics would indicate that the disease has become more virulent the past 15 years.

From 1925 to 1931 (6 yrs.) we had 78 intubated cases (reported by Dr. C. R. Bugg, 1938) who had to be tracheotomized. The mortality was about 12 per cent.

From 1931 to 1940 (9 yrs.) there were 75 intubated cases—with 34 tracheotomies and a mortality of 18 per cent.

Such an occurrence probably means nothing more than the normal wave of variation which all infectious diseases tend to display. With the record before us we must conclude that we have dismally failed to see the spectre of death lurking among our children, or we have ignored it.

All of us know that diphtheria can be as easily eradicated as smallpox and typhoid fever have been. One dose of alum precipitated toxoid given at 7 to 12 months of age will protect these children to the extent that at the end of the first year 85 to 90 per cent of them remain protected, and at the end of two years 75 to 80 per cent still have enough antitoxin in the blood to render them safe from infection. Dr. William Park pointed out several years ago that

two doses of alum precipitated toxoid, a month or two between doses, keeps the antitoxin titre of the blood to a higher level and for a longer period than one dose does. We physicians know that when possible this plan should be pursued; and further, that a Schick test should be done four to six months after the last dose.

But for practical purposes, where 80,000 infants ought to be immunized each year, one dose of alum precipitated toxoid given at 7 to 12 months of age without a subsequent Schick test will go a long way towards stamping out the disease from our midst. By such a course most of the infants will be protected at the most susceptible age and contacts and carriers will thereby be reduced to a minimum.

Whose fault is it that we have failed?

The pediatrician immunizes his private patients, the indigent patients under his care and the children in the clinic in which he works. The same thing is true to a lesser degree of the family physician practicing in a city. The rural doctor as a rule immunizes relatively few. One might argue that he has the greatest opportunity and responsibility for diphtheria prevention. It is he who contacts families all over his and adjoining counties, and only he who has a direct personal touch with these out-of-the-way people. Such an argument, however, is not altogether valid. He cannot of necessity have regular office hours. If he does, it is usually at night when the babies should be sleeping. He has duties of great moment to perform requiring immediate attention, surgery, obstetrics, major and minor medical cases, here, there and everywhere. One could not expect him to carry around refrigerated toxoid and to dispense it from house to house. But he has failed to impress upon these people the impor-

tance of having their children taken to a health centre where they can have toxoid given free of charge, if necessary. Local health departments immunize the indigent cases brought there, and send out literature. County welfare nurses are responsible for a relatively small number of immunizations in isolated districts. The State Board of Health sends out literature and reminders that there is a law compelling vaccination against diphtheria. But who, let me ask, undertakes to go out into the highway and hedges, into "the sticks" and into the isolated farm areas, and tell these people the importance of diphtheria prevention and how easily it can be accomplished?

Most of them can't read or write, so what good do pamphlets or brochures upon diphtheria prevention do them? Of what avail or notices from the health department stating that it is now time to have the baby immunized against diphtheria?

Of the 165 cases which we intubated many had never heard of diphtheria immunization, the majority had a vague nondescript idea about it, and a small per cent of these parents knew about it but were not enough impressed to go to the trouble of having it done.

In March, 1939, the compulsory diphtheria immunization law was passed. This law will be of definite educational value and will be a stick to hold over a certain percentage of the population. But do not let us physicians and health departments stand complacently by, expecting the law to do the work. It won't do it alone. Diphtheria prevention must be carried to the uneducated isolated communities where the disease is chiefly found.

Neither will the law as written upon the books be effective until toxoid is furnished to all physicians, all health

departments, and for every infant who needs it free of any charge.

It is just as important for the State to furnish free diphtheria toxoid as typhoid and smallpox vaccines.

The diphtheria immunization law cannot function fully at the present time as it stipulates that respective counties must furnish their own toxoid. At least one-third of the counties in North Carolina have no fund put aside for this purpose.

It would stimulate the doctors to use more toxoid if they did not have to bother with the small monthly accounts which come from the State Laboratory of Hygiene. They would immunize more indigent children under their care if they did not have to pay about 6 cents out of their pockets for each dose given.

What are some of the ways by which we may reach the heart of the matter?

These thoughts occur to me:

1. For the State to furnish free diphtheria toxoid for doctors, health departments and for every infant in the State who needs it.

2. For the State Board of Health, in cooperation with the U. S. Public Health Service, to carry out the plan it is contemplating of employing State Deputy Health Officers, whose duties it shall be to cooperate with the various County Health Departments in coordinating their work and in helping to arrange and carry out their health programs. These men must be intensively trained in public health work.

3. That a campaign of education be conducted early each fall, carrying the diphtheria problem to the homes of these remote people. This can be accomplished by such measures as having large posters picturing the suffering from diphtheria placed in all county stores, filling stations, schools and public meeting places.

Another valuable educational measure would be to have a moving picture

shown of a case of laryngeal diphtheria being operated upon. Mead-Johnson Co. have such a film and I have reason to believe that it would be loaned for health work to the State. Also the State Board of Health has the apparatus for making moving pictures, and would I know make such a film with the help of one of our pediatricians. This could be shown in all the rural public schools. Efforts to have the parents present would be necessary.

4. The compulsory immunization law states that a willful violation of the act shall constitute a punishable misdemeanor. I feel that if an officer of the law went to the homes of a few people in each community and compelled the parents to have their children immunized in cases where they have failed to do so it would have a salutary effect. This would make the people in these communities realize that there is a law which must be obeyed.

5. Combined typhoid and diphtheria clinics held in rural areas have proven their worth in the past and should be reinaugurated. These should be held each year and be well advertised in advance. It is in connection with these clinics that the rural doctor can be of inestimable service in influencing parents to bring their children to the clinic for inoculation. The most susceptible age, of course, is between 6 or 8 months to 3 years of age. School children have played an important role in clinics of a similar nature. They are given gold stars for having their baby sister or brother or those of the neighbors brought to the clinics.

6. Finally I plead that physicians, health officers, public health nurses and welfare workers come to a realization of the humiliating situation as regards diphtheria in North Carolina. If this is done the means for banishing the most cruel of all diseases will surely follow.

Air Movement and Humidity Control In Air Conditioning

By M. FRANK WOOTEN, JR.
Consulting Engineer, Charlotte, N. C.

THE control of air movement and the humidity, or moisture content, of the air are major functions of air conditioning. They are important functions for both health and comfort. Too, they are so closely related to temperature control that it is difficult to separate them. This relationship with temperature control is so close that all three functions must be considered before the so-called effective temperature of any space can be arrived at. This effective temperature, as it is called, is not measured on any thermometer, but is a measure of the comfort conditions of the space as determined by relating temperature, air movement and humidity conditions. Any two spaces, or rooms, which have the same *effective* temperature will produce about the same sensations of comfort to a person.

Possibly an illustration of this thing called effective temperature may serve to further clarify the very close relationship between temperature, humidity and air movement. The temperature which is usually considered to be most ideal for sedentary persons is 66 degrees effective temperature. This may be obtained with a temperature reading on the common thermometer (dry bulb) of 72 degrees, a relative humidity of about 27 per cent and an air movement of 20 feet per minute. If, however, the air movement is increased to about 500 feet per minute but the relative humidity is still maintained at 27 per cent, the temperature of the room must be increased to about 79 degrees. On the other hand, if the air movement is kept at 20 feet per

minute but the humidity is increased to about 75 per cent, the temperature may be reduced to 68 degrees. All three of these conditions will produce about the same sensations of physical comfort to the same person. However, while it is true that these various conditions will serve to produce about the same conditions of physical comfort, it is obvious that extreme conditions of any one of the functions, regardless of the fact that it may be offset from a comfort standpoint by a proper adjustment of the other two factors, will neither be desirable nor conducive to the best of health.

In an earlier article in this series the subject of temperature control was discussed in detail and therefore will not be discussed further here. Attention here will be confined to the other two factors, or air movement and humidity control. In this connection it must be remembered that man is a constant temperature being whose body temperature is controlled to a great degree by increasing or decreasing the temperature of the surface, or skin, tissues. Some heat must always be given off to the surrounding air and objects. The amount that is given off, or the rate, will depend upon the requirements of the body. But there are times when the temperature of the surroundings are too high for this skin temperature regulation and heat transfer to meet the body needs. When this point is reached, and as the temperature of the surroundings further increases, other means must be found and used to cool the body. Nature's system of evaporative cooling is the answer.

Nature has taken into consideration the seriousness of temperature control of the body and has provided this system of evaporative cooling which functions as the temperature of the surroundings increases. As the body begins to perspire and the skin is moistened each small part of the moisture, or perspiration, absorbs a small amount of body heat as it evaporates. In this way additional cooling for the body is supplied. But the air at any certain temperature will only absorb a certain amount of moisture. It is then said to be "saturated" and will absorb no more moisture. When such a condition of the air is reached during periods of high temperature, nature's reserve defense against temperatures is broken down and the serious ill effects of high temperatures are further emphasized. A well known example of the partial breaking down of this defense is the feeling of oppression and distress encountered on a very hot day immediately after a shower of rain which has nearly "saturated" the air with moisture.

Humidity control during the heating season, or winter months, is probably of greater importance to the health than it is during the warmer months. As a general rule, and especially in places where the air is not properly conditioned, the average indoor humidities during the heating season are very low. This relatively dry air will quickly absorb moisture from any and all places where it is available. The air passages of the body, which are normally moist, act as a filter to remove a large part of the floating material in the air. As long as the walls and tiny hairs of these passages are moist they catch and hold most of this floating material. But as the drier air goes through the passages they are dried out and the "filtering" system is

broken down. This one ill effect would be serious enough within itself but it does not stop here. The air dries out the delicate tissues along the passages to such an extent that they are literally parched, cracked and open to infection. This is said to be responsible for a large number of the common colds during the heating season.

In this connection much can be learned from a quick glance at the number of cases of respiratory disease during the various months of the year compared to the average indoor relative humidities. There seems to be a direct relation between the two. As the relative humidities go down, the number of cases goes up, and as the relative humidities go up the number of cases goes down. Such studies as this serve to emphasize the importance of humidity control as a health measure and the need for more properly conditioning the air we use. There are other reasons, too, for humidity control. One of them is that it is possible to keep the body warm without raising the temperature excessively. Increasing comfort and economy of heating, when considered, advance other reasons for humidity control and further stress its importance.

The movement of air was probably the first means used by man in his struggle for comfort during periods of high temperature. It was used during the ancient times, and the desire for it today has been responsible for the sale of millions of electric fans. The reason for all this is that as the body gives off heat and moisture to the surrounding air it does so to the thin layer of air nearest to the skin. As this thin layer of air absorbs heat and moisture, it becomes more nearly "saturated" and the absorption slows down until, at the saturation point, it stops. If the layer of air is not replaced no

more heat or moisture can be given off from the body and serious results will follow. It is said that this alone accounted for the deaths in the Black Hole of Calcutta when nearly a hundred English people were crowded into a small room for one night. Circulation, or air movement, is the means of replacing this thin layer of air with air which has not been heated or had moisture added to it by the body. If the circulation, or air movement, is slow, the replacement is slow and a distressing feeling, or discomfort, results. However, if the replacement and air movement is rapid, as in the stream of air from an electric fan, the unheated and drier air tends to cool the body rapidly by absorbing the body heat and moisture at a higher rate.

It is evident that air movement to break up and replace the nearly saturated film of air nearest the body is necessary. But it is obvious that the rate at which it is broken up must be controlled within certain limits. If the air movement is too rapid, it becomes known as a draft and will cause chilling of the blood, flesh and bones and the result is a stiffness or aching feeling. If the exposure to such drafts is prolonged, the body will be chilled to

such an extent that it loses some of its resisting powers and may indirectly be responsible for common colds or more serious illness. So that it would seem that a modern air conditioning system must not only adjust the temperature and humidity of the air, but it must also deliver this air so that a complete circulation without drafts is accomplished. There are other reasons for controlled air movement, such as breaking up stratified air, preventing cold floors and stagnation, but the reasons already mentioned will give sufficient background for further study by the reader concerning the importance of air movement in the modern air conditioning system as it relates to the health of the human body.

It is the hope of the writer that these articles will stimulate interest in the modern air conditioning systems and that further reading will be done. Neither time nor space has allowed more than a brief outline of the subject as it relates to man's health, comfort and happiness. Other functions may be, and usually are, included as a part of the modern system, but the system must include at least the functions of temperature, humidity and air movement controlled for health and comfort.

Impressions From A Brief Visit to the Northampton Health Demonstration

By ROY NORTON, M.D.

Professor of Public Health Administration
School of Public Health, University of North Carolina

(NOTE: The Editor of THE HEALTH BULLETIN asked me to briefly narrate some of the impressions gained by the class in Public Health Administration of the University School of Public Health during a brief visit May 17 to the Northampton County Health De-

partment. The students were asked to write down the points of chief interest to them and what follows is a summarization of these views.

The suggestion is offered that county officials, teachers of health and related subjects in our public schools, local

clubs and, in fact, all public-spirited citizens have much to gain by properly planned and conducted visits to their own and neighboring health departments. The health departments in all of our 80 counties having organized public health work are understaffed, but they welcome the opportunity of giving information about the available services an informed, reasonably healthy, and participating citizenry require.—R. N.)

Northampton is an average sized county of 27,000 population with about 70 per cent Negroes, predominantly rural agricultural, and has a low average income and wealth and has had relatively high maternal and infant mortality rates. There is no hospital in the county and only ten doctors and thirty-five midwives (reduced during the last two years from seventy-five). For the last two years special funds from the Children's Bureau have been made available for a demonstration maternal-infant health project through Dr. G. M. Cooper's Division of Preventive Medicine of the State Board of Health. The county agreed to pay for necessary hospitalization of mothers and infants under health department supervision.

The staff is larger than usual, consisting of the Health Director, the sanitarian, six staff nurses and supervising nurse, and an office secretary. There is also a dental program for the schools arranged in cooperation with the State Board of Health, and several physicians participate in the program on an honorarium basis conducting pre-natal and infant centers, syphilis treatment clinics, delivery service and consultations.

The health department is housed in comfortable and accessible ground-floor office rather than in a basement or attic.

A well-rounded and balanced public health program is carried out, including communicable disease control with emphasis on efforts against such special problems as tuberculosis, syphilis, malaria, typhoid and diphtheria and the general problem of vital statistics and laboratory service; school health supervision and general health education; sanitation of the environment, especially water and milk supplies, disposal of human wastes, public eating places and schools; protection during pregnancy, childbearing and infancy; improvement of nutrition, and the prevention of physical handicaps and rehabilitation of cripples. No well-informed person would claim this or any other health department service to be complete. For instance, mental hygiene service is undeveloped and all those named above could be made more nearly adequate. Special emphasis here, however, is well placed on the vitally important and often neglected maternal-infant health service.

The program is carefully planned to maintain balance and to avoid mere charity, medical-nursing practice or haphazard nuisance-chasing. Individual medical care, which is best left to private physicians, is not allowed to overshadow or hinder the disease-prevention, health-promotion program. All available medical, health and related agencies are coordinated into the county preventive-curative program.

Decentralization through development of several local health centers designed to serve the several local communities of the county helps to solve transportation and other problems involved in making health services available and accessible to those most in need of them.

Health literature, demonstration teaching at clinics, newspaper publicity, movies, cooperation with county

schools, talks to individuals and groups and all other available means of health education are used. Written or printed instructions are given by physicians at the various health centers.

The handling of the big midwife problem is especially interesting. Midwives have been delivering over 80 per cent of the babies. Some have recommended elimination of midwives with the work being taken over by doctors or by graduate nurses having special training in midwifery. The plan used here involves elimination of the unfit midwives with training, equipping, and supervising of the remainder. Women are urged to go as soon as the pregnancy is recognized to the office of the family physician or to the health center (at appointed periods) for a complete medical examination, including laboratory urine and blood tests and regular subsequent prenatal, delivery and post-natal supervision. The nurses in addition to the usual hospital training have had special courses in public health nursing and midwifery. The midwife attends the medical sessions at the centers, accompanying her patient and informing herself through the medical examination and advice given necessary, sterile equipment is made ready for each delivery. An incubator is available for premature infants. For delivery the midwife and nurse both go, the nurse serving as consultant and deciding if and when a physician should be called, and may in an emergency approve and arrange for hospitalization. This specially trained nurse service along with sterile equipment is available to private physicians with their deliveries. A careful study is being made of each maternal and infant death (each type is becoming rarer) in order to learn how to control such preventable underlying hazards as are found existing. Mothers come in for a medical examination six weeks

after delivery. They bring their babies to the center sessions monthly during the first year for advice on nutrition and for general medical supervision. Contraceptive advice is given to mothers when medically indicated to prevent death or invalidism of mothers or orphanhood of existing children. Those needing anti-syphilitic treatment are started on treatment as early in pregnancy as possible. Mothers or infants in need of hospital care are hospitalized. When obstetric or pediatric consultant service is indicated it is provided.

An interesting and instructive movie of local health and sanitary conditions has been developed and was shown to us.

It was observed that excellent health service can be delivered even though the very desirable modern equipment and elaborate housing facilities may not be available for the health centers scattered over the county.

The annual report prepared is useful to the staff in evaluating accomplishments and planning future programs and proves an excellent means of giving to the official boards and general public information on local health problems and accomplishments.

The class felt that if most of the mothers in counties now without public health services realized what they and their children are being deprived of, action would be promptly taken leading to the addition of health service in the remaining twenty counties.

HOSPITALITY

The discovery of the Department of Conservation and Development that the tourists who are attracted to North Carolina by its big advertising program do not all go away as advertisers of North Carolina is important. It places emphasis on the fact that while

advertising will bring customers to a state or a store or a product once, only money's worth will keep them coming back.

North Carolina's trouble with the disappointed comes not from lack of natural wonders, climate or variety but, in the opinion of John C. Baskerville, executive secretary of the Governor's Hospitality Committee, from greasy food and uncomfortable beds. It is undoubtedly difficult to get a decent meal in many places in North Carolina. Decent sleeping quarters are not much more readily available. But bad food and poor beds do not complete the list of tourists' troubles. There is also the matter of dirty toilets even in too many filling stations which boast about their pretended cleanliness. Everywhere in public places there is more evidence tending to convict North Carolina of slovenliness and dirtiness than there ought to be.

Apparently we need almost desperately a campaign about tourists at home. For getting tourists is not as hard as keeping them. A good many of them, indeed, would have to come if they move from North to Florida or from South to New York. Many of them do not have to be taught to come, but the State apparently needs teaching to keep them. It might be a good idea if the Department of Conservation and Development, in using the free advertising space which newspapers and some advertisers give it here at home, would talk less about how much there is to see where we already are and less about the results of advertising abroad and did some teaching—maybe even a little scolding—here at home.

Such tourist advertising at home might impress the tourists from abroad also. Certainly it would not disturb him if he knew the State itself were demanding decent accommodations for him. Mr. Baskerville has performed

one of the chief duties in his responsibility for hospitality in emphasizing the necessity for better food and better beds for the State's guests.

We can talk about Southern hospitality until we are blue in the face, but if toilets are dirty, food is greasy, beds are uncomfortable, we may fool ourselves for a long time, but we won't fool many tourists but once.—*News and Observer*.

EDITOR'S NOTE: The State Board of Health not only discovered long ago all the above catalogued repellents to visitors and settlers coming to North Carolina, but it has listed some others and has worked unceasingly for more than twenty-five years to improve conditions.



GRACE ELEANOR DUDLEY

The above is a picture of the daughter of Mr. and Mrs. E. L. Dudley of Raleigh.

She was born November 14, 1939. Weight at birth, 2 lbs. 14 ozs. She spent her first eight weeks in an incubator. On June 14 she weighed 14 lbs. and you can see for yourself that she really is enjoying good health. Premature birth is one cause of a high infant death rate. This baby is living proof that with prompt and efficient care there need be no such sacrifice of infant life.



The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request

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"Preparedness" at the Source



A GROUP OF TEACHERS AND CHILDREN

This group of undernourished children was used to demonstrate that it is qualitative rather than quantitative food that builds men and women and keeps them fit for life's duties and emergencies that may arise. Another successful experiment in balanced nutrition has just been completed at Chapel Hill by the State School Health Coordinating Service, a conjoint activity of the Department of public instruction and the State Board of Health.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	German Measles	Scarlet Fever
Appendicitis	Health Education	Smallpox
Cancer	Hookworm Disease	Teeth
Constipation	Infantile Paralysis	Tuberculosis
Chickenpox	Influenza	Tuberculosis Placards
Diabetes	Malaria	Typhoid Fever
Diphtheria	Measles	Typhoid Placards
Don't Spit Placards	Pellagra	Venereal Diseases
Eyes	Residential Sewage	Vitamins
Flies	Disposal Plants	Water Supplies
Fly Placards	Sanitary Privies	Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Baby's Daily Time Cards: Under 5 months;
Prenatal Letters (series of nine monthly letters)	5 to 6 months; 7, 8, and 9 months; 10
The Expectant Mother	11, and 12 months; 1 year to 19 months
Breast Feeding	19 months to 2 years.
Infant Care. The Prevention of	Diet List: 9 to 12 months; 12 to 15
Infantile Diarrhea	months; 15 to 24 months; 2 to 3
Table of Heights and Weights	years; 3 to 6 years.
	Instructions for North Carolina Midwives.

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THE Health Bulletin



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Notes and Comment

By THE EDITOR

ONCE again the wheels of the calendar have moved around to September, the beginning of the school year for more than nine hundred thousand North Carolina children. The newspapers have stated that the enrollment in the schools of the State is expected to top all previous records, running well up toward the million point. The problem from the public health standpoint is to see that these children enter school free from the common everyday defects which invariably hinder progress in school. Every child should have a physical

examination by a careful physician, including an examination by the family dentist. Some of the things which should be sought and eliminated are the usual types of everyday troubles such as decayed teeth, deficiency in vision or hearing, substandard nutritional conditions, the

The Editor of the Health Bulletin desires to pay humble tribute to the passing of a loyal and efficient worker in the State Department—Miss Ursula Pelletier—for thirteen years a trusted employee in the Vital Statistics Division. Her death occurred unexpectedly, following a surgical operation in a Raleigh hospital on July 19. In every large organization there are always a few people on whose hard work and efficiency depend the success of the enterprise. Miss Pelletier was one of those people. The names of such persons seldom appear in the public prints, but each day the job well done is satisfaction enough for them. All of her fellow workers mourn her death.

various skin troubles common to children and freedom from infected tonsils and adenoids. Most of these conditions can be eliminated or certainly helped by proper treatment through medical, surgical or dental care.

On the opening of school, if the teachers on the very first day could apply a sort of a screen testing to see that no such conditions above enumerated are present and if present, such as the deficiency in hearing which cannot be remedied, such children may be advantageously placed in a position in the schoolroom where the handicap will not

bother so badly. As has been stated before in these columns, the ambition of a true and sincere teacher is to turn out a well-rounded and useful citizen.

In these days of world-wide war, when it is so necessary that the physical condition of the manhood

of the country be at top-notch efficiency, it is more important than ever that the children in school this year be made fit morally, mentally, and physically for the trials and troubles and vicissitudes that are inevitably in store for them in the coming years.

* * *

Our good friend, Mr. William J. Andrews of Raleigh, took the trouble and time out to call us on receipt of his copy of the June Bulletin to tell us how well he liked the last page of that issue. He was particularly pleased with the little poem quoted from a previous issue of the News and Observer and written by Edith Earnshaw of Wake Forest. The title of the poem as we published it was "Raises Nuffin But Us." Mr. Andrews suggested that we have about five hundred extra copies of that page printed. He suggested also that some of the field workers of the Board such as the inspectors in the Sanitary Engineering Department, the nurses in the various county health departments and perhaps some of the vital statistics registrars obtain some information by way of comparisons with the mother described in the little poem who raised nothing but her children. Mr. Andrews would like to know something of accurate statistics on the number of women who specialize in gardens for the raising of flowers and shrubbery and those who specialize in playgrounds around the homes in which the children could play without hindrance. He would like to know how the number and health of the children in the two classes of homes compare.

It is an intriguing thought and we pass the suggestion along for the consideration of all of our interested

field workers in the State and county health divisions of public health work. We would appreciate having reports any time in the next few months from any one who, like Mr. Andrews, is particularly interested in this kind of statistics.

* * *

For the several thousands of our readers who have manifested interest in our humbug department, we would like to report this month that after publication in The Health Bulletin of the victim's letter from one of the western counties in which a faker had been representing himself as a "Dr." Williams, a graduate of Duke Medical School, etc., and employed by the State Board of Health, all of which were big old lies, we have a report from a man in a county a hundred miles from the first one in which he had been victimized later on in the same manner by apparently the same faker, giving the same name, etc. It so happened that a member of his family had just read the editorial in The Health Bulletin and read the letter quoted from the other correspondent, and as a precaution this wide-awake young member of the faker's second victim's family took down the automobile number. So after the head of the family had paid out his good money to this faker for the so-called medicine, this information was brought out. The result was a letter to the automobile license division at Raleigh which procured the name and address of the faker. It turned out that he was a man in a town some less than fifty miles from the victim's home. To shorten the story, the victim went over, confronted the so-called "doctor" with his evidence and was immediately reimbursed every cent of the money that he had paid to this fellow. All this informa-

tion was placed by the editor in the hands of the Secretary of the State Medical Examining Board, and we presume by this time the Examining Board and the Solicitor of that district have this fake, so-called "doctor" behind the prison bars.

This faker had become careless. As a rule they either steal an automobile or rent one or travel with some hireling from a public service garage, and of course the identity of the automobile license number would not mean anything. In this case, the gentleman had become bold, was thumbing his nose at the law and all the legal authorities, and had decided that he could "practice" anywhere in which the pastures were green enough. It will be noted always in the case of humbugs and fakers that they never bother about poor folks, that is, what we would call indigent people who have no money. They always victimize the fellow who has at least some pocket change.

* * *

We were privileged to attend on the evening of July 17 a very pleasing ceremony at the hotel in Goldsboro. On that occasion the staff of the Oral Hygiene Division of the State Board of Health gave a surprise birthday dinner to Dr. John N. Johnson, Vice-President of the State Board of Health and the second dentist to hold office as a member of the State Board of Health in the twenty years intervening since the first dentist was appointed to the Board. Dr. Johnson has given about nine years of consecrated service to the State Board of Health work. In addition to giving the dinner at the hotel in honor of Dr. Johnson, a plaque was presented to Dr. Johnson memorializing the occasion. All of

the friends of Dr. Johnson throughout the State will be pleased to know of this happy occasion. Dr. Johnson has made a great record both as a dentist and as a public-spirited and influential citizen, well known especially throughout eastern North Carolina, his services to the Board of Health work have been invaluable. We hope that he may have many more years of unselfish service to devote to the public health work in the State.

* * *

On July 21 Duke Hospital celebrated its tenth anniversary. That hospital opened for patients on July 21, 1930. This great institution, including the other departments at Duke University, was practically built in the forest adjacent to Durham. The hospital on the occasion of its tenth anniversary opened the new addition to the hospital building which added 113 beds to increase the total capacity of that great hospital now to 569 beds. Back in April the hospital treated its one hundred thousandth patient to be registered for admission to the hospital. That our readers may know something of the scope of the work done at that institution at this time, we may quote from the reports of the occasion. During the past year the hospital gave over 137,000 days to the care of bed patients. The dispensaries received patients totaling nearly 86,000 visits for treatment. Eleven thousand children have had bed care during the decade and 8,200 have been treated in the dispensaries. Nearly 3,700 babies have been born in the hospital. About 45,000 surgical operations have been performed in the hospital during the ten years.

Duke Hospital and the able Director of the Duke Medical School, Dr. W. C. Davison, have warmly cooperated with the State Board of Health in various enterprises during these past ten years in the interest of the public health advancement in this State. It is of course a matter of particular pride to the officials of the State Board of Health that the Director of the Hospitalization Service of the Duke Foundation of North and South Carolina is Dr. Watson S. Rankin, who for sixteen years was State Health Officer of North Carolina. We predict a place of increasing importance for the Duke Hospital and the Duke Medical School in the coming years.

* * *

The Department of Maternal and Child Health Service of the State Board of Health is quite proud of the success of two post-graduate meetings for physicians held in late June. These post-graduate courses were made possible through funds provided for such purpose by the Children's Bureau and through the cooperation of a number of obstetricians and pediatricians in North Carolina who contributed very largely to the success of the occasion.

The first of the symposia was held at Roaring Gap on June 16 and 17, followed by the second at Wrightsville Beach on June 23 and 24. As we have quoted already from some of the papers and discussions in the August issue of *The Health Bulletin*, we want to go a little further at this time and mention a few more items deserving of careful record which took place in the two meetings. Both of the courses were provided for physicians in private practice at no cost to them further than their sacrifice

of two days' time and the necessary travel required to attend. Nearly all of the papers were directed at the peculiar problems of physicians and would not be understood by most of the readers of *The Health Bulletin* if published. However, Dr. George W. Kutscher of Asheville, in a paper the title of which was "Preventive Pediatrics," presented at Roaring Gap, had the following pertinent paragraph which we have emphasized here in different language many times before:

"Many of us have had the various health departments take our cases from us and supply them free of charge with many of the inoculations. We as doctors complain bitterly about this. When I complained to one health officer, he answered me in this fashion, 'If you doctors won't inoculate the children we are going to do it for you.' Then and there I decided for myself that it was up to me to get to the child before the health department if I were to remain in business as a pediatrician. Giving preventive inoculations forms a large part of my income. It means a larger income to you as practicing physicians if you will do it. The public including your patients expect you to advise them as to what vaccinations are indicated and when. Give these inoculations early and when indicated before the health department does it free and takes the field away from you. The health department is interested in preventing diseases on a large scale and not worrying whether or not you will feel hurt about their taking your unimmunized patients from you. Do the job and collect before they get there."

The foregoing is rather bluntly spoken. The health department everywhere has insisted for many

years that people visit their family doctor for all of their medical needs, including their preventive needs. The health department in many localities has firmly insisted that all patients able to pay a private doctor should go to him for all of these immunizations, even when the private doctor does not seem to be much interested about it. The health department, as Dr. Kutscher pointed out so bluntly, is really interested in preventing disease, and in diseases such as diphtheria and smallpox which are easily controlled through persistent immunization has a right to insist that this be done for the protection of all the people.

Dr. Kutscher also made one other statement which is worthy of record, to wit: "If time were available I would like to recount several experiences where tuberculous maids and nurses have been found responsible for the tuberculosis discovered in some of my patients simply because I have remembered to do a tuberculin test on the child."

Finally, Dr. Kutscher said that "preventive pediatrics also includes a still more important phase of child care than has yet been mentioned, namely, child management. This part of pediatrics could easily consume as much time as has been allotted to this entire two-day conference. In the practice of pediatrics today this part of the work is rapidly outgrowing infant feeding." We hope all of our readers who have infants and small children in the family will re-

member that last statement of Dr. Kutscher's. Child management is one of the big problems and physicians should be in the forefront advising their patients on these important matters.

We wish merely to mention one of the papers presented at the Wrightsville symposium on the subject of prenatal or congenital syphilis. This was a highly technical paper prepared by Dr. J. M. Arena and Dr. David E. Plummer of Durham. The paper presented under the above title should be in the hands of every practicing physician in North Carolina whether or not he is particularly interested in syphilis control. In the interest of his patient and for his own reputation, he could not fail to be benefited by reading this short concise technical paper. We quote from one statement to emphasize the problem as discussed by these physicians. It is this: "Patients may give a history of previous anti-syphilitic treatment. So-called adequate treatment is by no means an assurance against the mother infecting the new-born. The possibilities, however, are remote. The determination of syphilis in the mother is a problem within itself. The circumstances in each individual case must be taken into consideration."

For physicians who have not read this paper we would heartily commend it to them, particularly for the clear-cut symptoms, methods of diagnosis and treatment.

Mental Hygiene Aspects of Impaired Hearing

By JAMES WATSON, M.D.

Director, Division Mental Hygiene
Department Charities and Public Welfare

THE editorial comments on Dr. Herring's excellent article "Preventive Work for the Hard of Hearing," in June Health Bulletin, point out the psychological damage which community attitudes may do to those with impaired hearing. Another aspect is the personality damage which the Hard of Hearing may do to themselves by the attitude they take towards their disability. As consultant to a Chapter of the American League of Hard of Hearing, and working on some of their committees, I became familiar with the terrific struggle some of these handicapped people go through in their efforts to maintain their mental balance and social adjustment.

It is estimated that in the United States there are over 10,000,000 adults and over 3,000,000 children of school age with impaired hearing. All these, as Dr. Cooper suggests, are in need of sympathetic understanding. But there are two groups that are more particularly in need of such help: the young people who lose their hearing in the late teens or early twenties just in the midst of their plans for establishing themselves in a career and a home, and the middle-aged group whose disability begins to hamper them and shut them in at the time when they should be about to reap the benefits of training and experience.

From the younger group one often gets the bitterly told story of plans for matrimony dropped, college plans

uncompleted, doors to a business or professional career shut. From the older group it is a heavy-hearted story of promotion missed, being compelled to take second place where one had previously been first, the gradual cutting off of opportunity and reward. With it there goes the tragedy of the narrowing of the satisfaction supplied to the affections. When the confidential and intimate affairs of the home life can only be shared by spouse and family in tones that can be heard by all the neighbors it means so often that the hard-of-hearing member of the family is left out of much of the family life.

The League of the Hard of Hearing, consisting of many thousands of members, has many objectives such as securing suitable employment for its members, educating the employer class as to the value of the hard-of-hearing employee, modifying the unjust and unsympathetic community attitudes (as disclosed in the June Health Bulletin), offering social activities for those with impaired hearing, promoting lip-reading classes, etc. Mental Hygiene suggestions it offers to its members are along the following lines:

(1) Accept your disability.

It is perhaps the younger group who need this suggestion most. There is quite a tendency to pretend they hear when they do not. Instead of saying, "Excuse me, but you will have to talk a little louder as I am

hard of hearing," they tend to be content with hearing a little of what is said and guessing at the rest. This leads sometimes to making ludicrous mistakes which when they discover them hurt their self-esteem to such an extent that they become seclusive. They refuse invitations from their friends and stay home and brood until they become paranoid and hostile to the world. One brilliant young woman, a university graduate and at present holding an important scientific position, said to me: "Because of the mistakes I made through pretending to hear when I could not my feelings were so hurt that I entirely withdrew from social contacts and was on the threshold of dementia praecox when a neighbor who was hard of hearing persuaded me to go to a meeting of the League. There I learned 'to get on to myself.' It seems so very foolish now that I should have allowed myself to have slumped the way I did, but it very nearly became a tragedy."

(2) Don't be ashamed of your aidphone!

It is no more of a disgrace to carry an aid to hearing than it is to wear glasses; you should especially wear it when among strangers because it indicates to them that your hearing is impaired and saves you from having to tell them.

(3) Keep up your social interests!

Should necessity compel you to drop one get another interest in its place. Get acquainted with other hard-of-hearing people in your community and pool your interests and experiences in handling your handicap. United effort on the part of deaf people gets ear-phones put into churches, movies, auditoriums, etc. When people with impaired hearing

stay home these aids to social contacts are not furnished by such institutions because no one goes to use them.

The chapter of the League to which I have referred has activities of various kinds for different age groups almost every night of the week. One night a week is a general meeting for all groups for social contacts. Usually they have a speaker and a discussion. On occasions when I spoke to them I noted that about a tenth were speech readers; another tenth used their own aids to hearing; the rest used ear-phones and I spoke into a microphone. Discussions centered around personal experiences, new aids to hearing, employment difficulties, etc. They were a cheerful, enthusiastic lot of people; of different age groups and of different cultural levels, but united by all having a common disability which they were helping one another manage.

(4) Hang on to your sense of humor.

To be able to stand off and look at oneself and smile is a personality trait of great value. Just how one who does not have a sense of humor can develop one I don't know, but certainly the deaf person who has such a faculty and keeps it alive is that much better equipped to handle his disability. I have a friend who occupies an important executive position in a large office. He is totally deaf but almost a perfect speech reader. People sometimes have done business with him for months without discovering that he cannot hear. He gets a great kick out of observing their embarrassment and change in behavior when they find out that they are talking to a deaf man. They usually get

flustered and stammer and then try to talk "clearly and distinctly." But the lip reader reads speech by observing the normal movements of lips and mouth and the stilted speech of one trying to talk "plainly" throws him off. Tom looks at them with a whimsical expression on his face and says: "Now look, buddy (or sister as the case may be), if you want me to understand what you are saying you will have to talk like a human being. Stop doing a shimmy with your lips and forget I can't hear and then you won't have to go through so much agony."

It is a common psychiatric dictum that "what a person ultimately be-

comes depends upon what he has to begin with plus what he runs up against plus what he does about it." Most human beings have some personal disability to handle. Some are deaf, some blind, some have disfiguring birthmarks, some have crippled limbs. Many people who are free from these evident handicaps have personality traits which in secret they have to fight all their lives in order to maintain their mental balance and social adjustment. For all such people, as with the deaf, perhaps the most important part of the above dictum is "What they do about it."

A Nutritional Program

By WILLIAM H. RICHARDSON

State Board of Health

WHEN, last February, Dr. Carl V. Reynolds, State Health Officer, announced the coordination of certain cooperative groups to give the subject of nutrition their serious consideration, with a view to working out remedial measures, he said: "The human being, not the guinea pig, will receive the benefits. The purpose of the study," he went on, "is to get an accurate measure of the present nutritional status of selected areas and groups of population. This basic information is considered necessary both to outline the problem to be attacked and to furnish a base line against which improvements can be measured. In North Carolina not only poverty, but ignorance, has led to ill health from food deficiencies and resultant deficiency diseases."

Two highly satisfactory experiments have just been completed in connection with the North Carolina

program, these having been conducted by the State School Health Coordinating Service, a conjoint activity of the State Department of Public Instruction and the State Board of Health, under the sponsorship of the Rockefeller Foundation.

Each experiment involved a group of children ranging in age from five to thirteen years, with most of them falling between the ages of seven and nine. Both races were represented. The experiment as it affected the Negro group was conducted at the North Carolina College for Negroes, at Durham, while the white group was assembled at the School of Public Health at Chapel Hill.

The experiments lasted for about five and a half weeks and were made by white and Negro teachers, as a part of a course in school health education, in which teachers were taught what to teach along this line. Their pictures appear on the covers of this issue of the Bulletin.

While work on this project is not yet complete in all its details, there are enough essential findings available at this writing to pass on to a public whose interest in the nutritional program is earnestly solicited.

An outstanding fact is that the amount spent per child was between eighteen and twenty cents a day. Computations were made on a basis of retail prices.

Already this question has been asked:

"Does this mean that Mr. and Mrs. Average Citizen can feed their children for the above figures?"

Exactly so.

One of the purposes of the experiments was to show just what can be done by the judicious choosing of well-balanced yet inexpensive food on a scientific basis. Here we have the suggestion of domestic, or culinary, preparedness.

And it might be added in this connection that not every undernourished child is an underprivileged child or the child of poverty-stricken parents. Quite the opposite is very often true.

Of significance, also, is the fact that the cooperative agencies, representing, as they do, important functions of state government, are providing a special course to a selected group which will take the fundamentals of public health to the general public through the medium of the classroom. While there have, from time to time, been various nutritional experiments conducted here in North Carolina, yet here is a new angle, one that should give impetus as well as emphasis to this entire field of helpful endeavor, through the orderly processes of education, upon which all true progress must rest.

Now, a brief explanation of the technique employed at Durham and Chapel Hill.

Only low-cost meats, without bone and with very little fat, were used. For example, pork liver was used for all dishes made with liver except where beef liver, which is more expensive, is specified on the menus. Lean beef trimmings were used in all dishes made with beef, veal clods for those made with veal. It was found that canned pilchard was cheaper than fresh fish because there was much less waste. However, fresh fish might be used to better advantage in sections where it is plentiful and, consequently, cheap.

Most of the vegetables used were fresh. Only vegetables in season were used wherever possible. This verifies the conclusion that, in carrying out a nutritional program on a well-balanced, scientific basis, a family can save money and cut the cost of foodstuffs even more by raising its own vegetables in the home garden, where this is possible.

Practical use was made of fruit juices, which were secured in 46-ounce cans, which is also practical for use in larger families. Tomato juice was drained from canned tomatoes which were used in preparing other dishes.

In these particular demonstrations canned evaporated milk was used, and wheat hearts, which are inexpensive, were bought directly from a flour mill. The cost was only four cents a pound. All bread was home-made and only whole wheat was used. The children quickly adapted themselves to evaporated milk which was the beverage used at every meal and was also used in the preparation of bread, puddings, ice cream, etc.

Here is what each child was offered daily: One quart of milk; egg, as such, or made in dishes; meat, fish, or fish roe; three kinds of vegetables, including one raw; fruit, or fruit juices, two servings; made dessert, one serving; whole grain cereal, one serving; whole grain bread, three times daily.

The children were served small portions of each thing on the menu. They were allowed to return for more of any food served so long as they were eating some of each portion on their plates. In order to encourage them to eat a variety of foods they were allowed only eight ounces of milk and one serving of dessert at each meal. They were not nagged about eating what was set

before them. On the contrary they were allowed no food between meals. This plan worked like a charm and soon promoted good appetites at meal times, even among those who appeared at first to be "finicky."

Regular schedules were observed between meals, including rest and recreation, and at night the children were taken back to their homes. They registered gains in weight of from two to seven pounds during the five and a half weeks the experiments were in progress. Moreover, they developed many excellent habits and all expressed themselves as being eager to "come back next summer."

The following is a list of menus used from June 17 through June 22:

(Continued on Page 15)

FOUNDRY DUST HAZARD DISCUSSED

The July issue of the Journal of the American Public Health Association contained an article by M. F. Trice, of the Division of Industrial Hygiene, on "The Foundry Dust Hazard and Its Control." In this paper the results of previous studies are reviewed. Particular attention is given studies made in North Carolina and New York, where 1.5 per cent and 2.7 per cent, respectively, of all foundry workers were found to have silicosis. Emphasis is given the fact that the incidence of well defined dust pathology does not tell the whole story, as the incidence of several of the more common respiratory diseases is higher among foundrymen than among the population generally. The sources of foundry dust are discussed as are the methods employed for its control. Reprints of the article are available upon request.

NORTH CAROLINA SETS THE PACE FOR IRELAND

On a recent visit of Mr. J. A. Burns, District Manager for the Westinghouse X-ray Company, Inc., to the offices of the Division of Industrial Hygiene it was learned that some public health agencies in Ireland had purchased X-ray equipment similar to that used in North Carolina in the study of silicosis and other occupational diseases. The X-ray equipment of our Division of Industrial Hygiene was described in the June, 1938, issue of the Journal of Industrial Medicine under the title "North Carolina's Mobile X-ray Laboratory." The Westinghouse Company, according to Mr. Burns, sent reprints of the article to Ireland, where it was utilized by the public health authorities of Eire as a guide in purchasing similar equipment. This is a gratifying bit of news, especially as the North Carolina portable X-ray unit was the first of its kind.

Poisons Kill 500 American Children Every Year!'

By J. M. ARENA, M.D., Durham

THESE household accidents can be prevented by reasonable care and precautions. All drugs and poisons should be kept away from children. The results of parents' carelessness in leaving poisons where innocent children can swallow them are tragic. Take lye poisoning as an example. Lye is used extensively in the washing of clothes, scrubbing of floors and the making of soap. The unintentional but criminal carelessness of adults in leaving lye within the reach of young children is responsible for so much grief and suffering that it seems that this very grief and suffering should result in stopping its use. This is not the case at all. During the past nine years sixty children suffering from lye poisoning have been treated at Duke Hospital. Of course, lye is seldom swallowed twice by the same victim, but once is much too often. The sale of lye should be prohibited by law. The use of a poison label on the can is not sufficient to prevent the poisoning of babies.

Most of the victims of lye poisoning are small children, usually babies, thirsty babies, who are too young to know that the lye they are swallowing is not water or milk. Babies such as these are being tortured yearly and sometimes murdered by careless adults who leave lye, a cruel and deadly poison, within their reach.

The result of the swallowing of lye is scarring and closing down of the esophagus (gullet) accompanied by cruel suffering, and 14 per cent of the babies, who drink lye by mistake, die. The esophagus or throat swells until swallowing is difficult or even impos-

sible. The pain accompanying a badly swollen throat and the difficulty of swallowing food and even liquids resulting from a closed esophagus in a small child are, or should be, repellent to the imagination of any adult. Treatment is long and painful, and too often the parents consider the child cured and discontinue treatment when signs of suffering disappear. Three or four days after the lye has been swallowed the inflammation may subside so that the child may swallow food and liquids without difficulty. This unfortunately gives the parents a false sense of security since they feel that recovery has taken place. However, the scarring of the gullet continues and in a month's time, and sometimes much later, the gullet closes until not even saliva can be swallowed.

It is absolutely unnecessary for any child to become a victim of lye poisoning, if the parents would stop using lye or would keep it away from places where children can get it. However, if a child does swallow lye a doctor should be called immediately, and the child should be made to drink diluted vinegar, lemon, grape fruit or orange juice to neutralize the alkali, and then he should drink olive or sweet oil. The infant then should be placed in a hospital where a tube can be passed into his gullet every day for two months so that the gullet will not close down. Many of these patients are brought to the hospital after the esophagus has closed, so that it is necessary for a surgeon to operate on the stomach and to insert a tube into it so that food can be poured in. These victims of the parents' carelessness in leaving lye

within children's reach must then be fed artificially for months or years through a tube inserted in this opening in their stomachs. Hospital diagnosis and treatment are imperative for children who have swallowed lye, and the fact that the hospital usually is at some distance from the scene of the

accident makes the treatment expensive. However, remember that the simplest and most intelligent procedure is to stop using lye, but if it is used, it should be kept out of reach of children.

* From a series of articles published in the newspapers of Durham under the sponsorship of the local Medical Society.

OUT-OF-STATE VISITORS

Quite a number of important out-of-state officials, many of them from foreign countries, visited the State Board of Health during the past sixty days. Among them may be mentioned Dr. Pedro Daniel Martinez of Mexico City, who spent three weeks in the State observing methods employed for reducing the maternal and infant death rate as carried out under the direction of the Maternal and Child Health Service of the State Board of Health. Dr. Martinez was particularly impressed with the work carried on under the direction of Dr. A. C. Bulla, health officer of Raleigh and Wake County, the Northampton County work under the direction of Dr. W. R. Parker, and the Orange-Person-Chatham District under the direction of Dr. W. P. Richardson. Dr. Martinez spent several days in each of these counties and was enthusiastic in his reports of what he had learned.

Another much appreciated visitor was Dr. Eva F. Dodge of the Alabama State Board of Health. Dr. Dodge is in charge of the Maternal Health Service field work in Alabama. She had recently been given a leave of absence from the Alabama Board to spend three months in Porto Rico setting up the Maternal

and Child Health work in that island for the United States Children's Bureau. Dr. Dodge's description of the work in Porto Rico was exceedingly interesting. The editor particularly appreciated the visit of Dr. Dodge because of her long and successful record in Maternal and Child Health Service work, having been located for several years in Winston-Salem. Dr. Dodge offered many helpful suggestions to the editor and attended several committee meetings inaugurated by the division during the administration of Dr. Parrott and in the first two years of Dr. Reynolds' administration before going to Alabama.

Among others who were welcome visitors to the Board offices was Dr. J. N. Baker, State Health Officer of Alabama; Dr. B. F. Austin, Director of the Bureau of Hygiene and Nursing of the Alabama State Department, and Doctors J. R. Sharman and W. M. McCall of the Alabama Department of Education.

Dr. M. V. Ziegler of the United States Public Health Service and Dr. J. M. Saunders, Regional Medical Consultant of the United States Children's Bureau, both spent several days in the office recently in the interest of their work in this State. Both are able officials and their visit was much appreciated.

A NUTRITIONAL PROGRAM—Continued from Page 12

JUNE 17

Breakfast

Applesauce
Wheathearts and milk
Graham biscuit
Butter—Milk

Dinner

Tomato juice
Veal stew
Cabbage slaw
Graham biscuit
Butter—Molasses
Milk

Supper

Scrambled eggs
String beans
Whole wheat muffins
Butter
Prune pudding
Milk

JUNE 18

Prunes
Oatmeal
Biscuit toast
Butter—Molasses
Milk

Pilchard loaf
Buttered beets
Boiled potatoes
Whole wheat biscuit
Butter
Applesauce
Milk

Orange juice
Creamed eggs and
green peas
Cabbage and apple
salad
Wheatheart crackers
Butter—Gingerbread
Milk

JUNE 19

Orange juice
Wheathearts—Milk
Scrambled eggs
Toasted wheatheart
crackers
Milk

Meat balls in brown
gravy
Mashed potatoes
Buttered cabbage
Raw carrot strips
Whole wheat biscuit
Butter—Molasses
Milk

Bread and cheese
pudding
Stewed tomatoes
Mixed green salad
Raisin cookies
Milk

JUNE 20

Grapefruit juice
Whole wheat muffins
Butter—Molasses
Soft fried eggs
Milk

Beef liver stew
String beans
Corn meal muffins
Applesauce
Milk

Creamed potatoes
Fried fatback
Beet and turnip
greens
Raw turnip strips
Toasted cornmeal
muffins
Chocolate blancmange
Milk

JUNE 21

Prunes
Wheathearts—Milk
Soft boiled eggs
Wheatheart crackers
Butter—Molasses
Milk

Meat loaf
Raw carrot and
cabbage salad
Molasses
Hot biscuit
Milk

Baked lima beans with
tomato and fatback
cubes
Buttered spinach
Whole wheat biscuit
Milk—Indian pudding

JUNE 22

Orange juice
Oatmeal with raisins
Toasted whole wheat
biscuit
Butter—Molasses
Milk

Pilchard and egg salad
Whole wheat muffins—
Butter
Stewed tomatoes
Chocolate ice cream
Milk



This group of Negro teachers, training for school health service back home, conducted similar nutritional experiments with a selected number of Negro children in Durham, with the same general results that were achieved at Chapel Hill. Thus, we see both races participating in a program designed to teach the value and the economy of well-chosen, well-balanced food. A story about this movement appears in this issue of the Bulletin.



The Health Bulletin

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This Bulletin will be sent free to any citizen of the State upon request

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OCTOBER, 1940

No. 10

Trailer Clinics Are Expected to Be Practical in the Health Work



EDGECOMBE'S TRAVELING CLINIC Photo by M. S. BROWN

The above is a picture of the trailer, equipped as a traveling clinic, of the Edgecombe County Health Department. Elsewhere in this issue is an article describing the design and equipment of this outfit. The trailer was designed by Dr. F. E. Wilson, District Health Officer of Tarboro. It is one of the best built and most superbly equipped traveling clinics ever used in this State. The nurse standing by the door is Miss Hulda Wood, one of the department nurses, who takes the clinic around attached to her automobile. Trailer clinics have been pronounced successful in other parts of the country, and it is confidently expected the enterprise to be highly successful in the work in Edgecombe County.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	German Measles	Scarlet Fever
Appendicitis	Health Education	Smallpox
Cancer	Hookworm Disease	Teeth
Constipation	Infantile Paralysis	Tuberculosis
Chickenpox	Influenza	Tuberculosis Placards
Diabetes	Malaria	Typhoid Fever
Diphtheria	Measles	Typhoid Placards
Don't Spit Placards	Pellagra	Venereal Diseases
Eyes	Residential Sewage	Vitamins
Flies	Disposal Plants	Water Supplies
Fly Placards	Sanitary Privies	Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY


The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Baby's Daily Time Cards: Under 5 months;
Prenatal Letters (series of nine monthly letters)	5 to 6 months; 7, 8, and 9 months; 10, 11, and 12 months; 1 year to 19 months
The Expectant Mother	19 months to 2 years.
Breast Feeding	Diet List: 9 to 12 months; 12 to 15 months; 15 to 24 months; 2 to 3 years; 3 to 6 years.
Infant Care. The Prevention of Infantile Diarrhea	Instructions for North Carolina Midwives.
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THE Health Bulletin



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Vol. 55

OCTOBER, 1940

No. 10

Notes and Comment

By THE EDITOR

DURING the month of August, storms of hurricane proportions in some sections with excessive rain precipitated some of the worst and most damaging floods in the history of the State. The worst of property damage, loss of life, and other results occurred in the western, northwestern and northeastern part of the State. The disaster, coming in what the Weather Bureau called flash floods, taxed the capacity of the local health departments in areas affected, and also the State Health Department, to the utmost to deal with the dangers and suffering following in the wake of the flood. Everybody, including the Red Cross, the Government coastal service in the east, the WPA and the other Federal organizations at work in the State, all cooperated as a unit with the health and relief departments in each section.

The State Board of Health sent out engineers and sanitarians, also nursing and medical aid. One of the worst damaged counties was Northampton in which a report states that 456 families, totaling 2,256 individuals and 300 homes, were affected by the flood. The Red Cross regional director, on leaving the county at the conclusion of the emergency, stated that "words are inadequate to express the work the

health department has rendered. They have been on duty day and night carrying this extra load of work alone until a National Red Cross nurse arrived to aid in the emergency relief work."

Dr. Parker, the county health officer, has reported graphically on the situation in Northampton. It must be understood to realize the extent of the disaster that this flood comes just before harvest time and the tenants on the lands affected have lost all of their crops, much of their livestock and poultry. The landowners, of course, are in the same predicament, having lost their entire year's investment in these crops, besides in some cases they have advanced supplies to the tenants for which there will be no way to collect. People in the towns and sections in surrounding territory where the storms did not do so much damage have responded to calls and have donated many supplies. The Division of Preventive Medicine of the State Board of Health assigned Dr. E. S. Lupton of the division to aid in the work in Halifax County, one of the counties in which the property damage and loss of homes and crops was terrific. Dr. Lupton went over immediately to aid the county health officer. Six hundred and fifty Negro refugees were gathered in the two Negro schoolhouses at Scotland

Neck. The men were segregated in one of the houses and the women and children in another. Blankets and improvised bedding was provided so that these poor people could get some sleep and rest. Provision for safe and plentiful food was set up.

Miss Cora Beam, also of the division, was assigned to work to aid in nursing. Two volunteer graduate nurses who were sent down from Roanoke Rapids, together with a Red Cross nurse who was assigned to the work by that organization, and a systematic procedure was soon inaugurated. Besides clothing and food provided, as these people had lost all, having to be brought out in boats sent in to rescue them, typhoid vaccine and toxoid were given those who had not been immunized recently. Aid was rendered by Dr. Lupton to Mr. Ben Everett of Palmyra who had about 150 refugees whom he was caring for himself. Quinine administration was inaugurated from the beginning, both in Halifax and Northampton, in order to prevent widespread outbreak of malaria. Everywhere the emergency was handled in the most efficient manner possible.

In a letter to the State Board of Health from Dr. Lupton, in his periodic reports, he closes with the following statement: "I rode down to the river yesterday afternoon to see some of the houses and it was a sickening sight to see. The floors were warped; the furniture was coming to pieces, and brown mud covered everything. The odor everywhere was nauseating. The water has gone, but it is a slow process getting the homes, wells and toilets in shape so that the people can get back to their places."

The destruction of public property, such as bridges and roads, was probably worse in the west, but it is likely that more people lost their all in the floods

in the east. The people of the whole State should not forget that for at least one full year all of these unfortunate people will need help, financially and in every way, in order to reinstate them and encourage them to go on in their normal pursuits.

* * *

Old-time readers of THE HEALTH BULLETIN may easily recall that these columns for thirty or forty years has been presenting information about typhoid fever and how to eliminate it from the State. Almost marvelous success has attended the work during the last twenty-five years—improved water supplies, safe milk, attention to elementary sanitation, and immunization against the disease have almost eradicated it as a major problem. A recent outbreak in High Point again draws attention to the public that the disease has not yet been completely eliminated. The danger is just as great as it has ever been, should there be relaxation and carelessness in requiring preventive measures and caution on the part of the general public. In High Point a large boarding house said to accommodate about 125 people needed an extra Negro servant. A young Negro man was hired and put to work at such things as peeling potatoes, washing lettuce, food which went in the making of salads without boiling or applying heat. After three or four days the Negro complained of being sick. In due time a diagnosis of typhoid fever was made, and as these lines are being written, twenty-three cases and one death have occurred so far as a direct result of this Negro's employment in the boarding house.

The case illustrates so many things that we do not have space in this short comment to even allude to all of them. In the first place, it illustrates the fact that none of us are completely pro-

ected at any time against such outbreaks. The best protection we have is regular typhoid inoculation about every three years. It illustrates the fact that the present law requiring a health certificate as recently as six months is no protection whatever in such a case. If every employer would demand of each employee coming on for the first time a thorough physical examination by a competent and trustworthy physician, and if the employer would await a result of the different laboratory tests before setting such an employee to work, such an outbreak could be prevented.

The situation in High Point was handled superbly well by Dr. Herring, the health officer, through prompt reporting, service from the physicians and a general immunization immediately set into effect, and the proof that the High Point milk and water supply was not involved has been worth more than the health department there could cost the taxpayers in a quarter century. Dr. Herring rightly pointed out, however, that the occasion simply illustrates the necessity for constant vigilance on the part of the people at all times, and also proves the value of typhoid vaccination at least once every three years. It is to be hoped there will be no other such outbreak in the State this year.

* * *

Over in one of the eastern counties the other day the health officer passed along a letter from a woman who had been coming to the venereal disease clinics for anti-syphilis treatment for some time. The woman had been referred by one of the prenatal clinics as needing regular weekly treatments for syphilis. When the checkover for the regular weekly syphilis clinics was made it was noted that this particular woman had not come for the weekly treatment. She was immediately writ-

ten and requested to report at once. Her reply was to the effect that just as soon as she could get out of bed and leave her new baby she would be there for treatment as usual, said she could not come until the baby was about ten days old, which of course was true.

The point in publishing this notice here is, first, to illustrate the importance of the prenatal clinics now conducted in more than fifty counties for the benefit of such women. It indicates the rather considerable number of cases of syphilis present in pregnant women, and it indicates, second, the necessity for each county health department having a complete follow-up system, especially for its prenatal cases when failing to report at the prenatal clinic or at the venereal disease clinic.

In this case, the woman had been treated sufficiently long to enable her to give birth to a baby free from the disease, but it emphasized the necessity to go on until the disease is completely arrested. That particular case turned out well. As usual, the thoroughly persistent and careful follow-up work by the public health nurses is necessary always for a completely successful public health program.

* * *

We frequently receive copies of letters written by people in this State to the office of the President of the United States. Most of them requesting material aid. During August we had several of these letters. One woman, the mother of an eight-year-old child suffering from extreme spastic paralysis, a condition that is most often hopeless, has been found to have been most cooperative with the various orthopedic surgeons and the health officer in her section and the clinic nurses in trying to do something for her child. None of it, of course, could amount to much except the custodial care. She has

written to the President, however, and requested some financial aid. In conclusion she stated that she would be glad to go and work at the White House until she paid the sum back if they would wait until her "new baby finished cutting his eye teeth and his stomach teeth." Naturally, the President did not need any extra help at this time and therefore the woman must depend on the usual channels for aid.

It is encouraging to know that everything humanly possible had already been done for the child by the Cumberland County Health Department and other agencies involved. This woman's letter and her fine cooperation is contrasted with another letter coming in the same mail from a Washington department which had gone to the President in similar manner. This other woman from Asheville was also soliciting material aid. She stated that she had appealed here and there and nothing had been done for her eight-year-old son. This woman reported that her boy had been paralyzed when he was three months old and that she had tried to get things done for him but did not seem to be able to get any help. This department is cooperating with one of the branch orthopedic clinics in Asheville. We therefore wrote the city health officer and requested that a nurse make an investigation and have the child brought in to the next orthopedic clinic, which is held at the Biltmore Parish house every fourth Saturday morning in the month. Just before we go to press with these sketches the nurse sent out by the city health officer of Asheville makes a report on the case. We quote from the nurse's report, which is highly interesting and illustrative of the difficulty we have in some instances

in getting such children treated on account of the non-cooperation of their parents. Please listen to the following:

"This woman came here from East Laport about eight years ago, married Blank Jones, had one child named Douglas. This marriage was annulled in three months. She then married Blank Smith. He has been gone two years. She worked at a local industrial plant until two years ago. She was enabled to get three hundred dollars compensation at intervals so she quit work. The woman took her child to Dr. Saunders clinic when he was three years old, was assured by the surgeon that the child could be helped and she was urged to bring him back from time to time but she never has done so. On this recent visit she was urged to bring her child to the Saunders clinic for the Saturday morning following, and was told that if she could not get the child there that the nurse would go and bring it to the clinic. Just before the close of the Saturday morning clinic mentioned, as the child had not shown up, the nurse went for the child, but they had picked that day to go visiting somewhere in Biltmore, the very place where the clinic was being held, but no one was able to locate them." It requires patient efforts to overcome the indifference and prejudice of such parents, and every health officer and health department force, together with the welfare department, should spare no pains trying to get the necessary cooperation from the parent for the life-long benefit of the child.

* * *

Before these lines are in print there is no doubt that the national compulsory military training law will be on the statute books and young men all over the country between 21 and 31

years of age will be called to undergo physical examination for the selective training contemplated. Dr. Reynolds has already insisted that in this State provision be made for physical examination of such young men on a voluntary basis so that complete data would be available before a draft call is issued. This is only common sense. It would save a great deal of trouble and disruption of work if those who are found to be physically deficient could be located first before the calls are sent out to report for training service. In the war twenty-five years ago it will be remembered that about 38 per cent of all young men called for the draft were found physically unfit for military service. Following the hard years of the depression, it is unlikely that the percentage will be any better at this time. One advantage in making such examinations would be the complete data available to physicians and health officers in every county so that necessary measures could be set about for the benefit of these deficient young men in order to bring up many of them to the necessary health standards for military service. For a student in college or a young man in an important job to have to waste several days time to report for a physical examination and then to be turned down when the draft call is issued would result in a great deal of loss of time and disruption of everyday normal service in many directions.

* * *

A graphic illustration of the necessity for a properly enforced marriage law in North Carolina was received a few days ago from a resident of Rockingham County. This woman writes requesting aid for a couple married in

that county presumably before the marriage law went into effect, or a case in which the couple simply moved over the line to Virginia and got married after the North Carolina law went into effect. We quote from the letter of this neighbor as follows:

"We have a girl here in our neighborhood who is about fifteen years old. She is married and is now an expectant mother. She has something like epileptic fits and says she has had them for the past few years. Her husband also has the same kind of fits. They both had them before they were married. . . . This girl really needs something done for her at once. They are very poor people. Please let us know if there is anywhere they could get something done for them."

Comment on this situation is hardly necessary. It is agreed by all competent authorities that every epileptic man or woman should be sterilized before being allowed to marry. Epilepsy is one of the conditions which is transmitted through inheritance. There is no cure for the condition. It is highly essential that the marriage law in North Carolina which was enacted for the protection of all the people, particularly such individuals as described in this letter, should be conscientiously enforced by every physician and every law official in this State so that its protective benefits may be received by all of the citizens. In this case, it is purely a matter of prevention. No one can even estimate the damage done through the marriage of incompetent and diseased individuals. We owe it to posterity, to our country itself, to prevent such occurrences at all times everywhere.

Public Health and the Private Practice of Medicine

By FRANK HOWARD RICHARDSON, M.D.

IT would probably be quite safe to say that the majority of the readers of the BULLETIN of the North Carolina State Board of Health are definitely opposed to State or Socialized Medicine, though it might be rather difficult to get them to agree upon just what they meant by this much used and frequently misunderstood term. Certainly a majority of them would agree in opposing the encroachment of the State, by any of its salaried officials, upon the domain of the private practitioner. They would say that for city, county or state physicians or nurses to perform free a service that people are perfectly willing to pay their private physicians for rendering, constituted a gross abuse.

And yet it would be equally safe to say that by their indifference, indolence, or failure to appreciate their duty toward their patients, a large majority of the readers of the BULLETIN are doing the very best they can to turn from their own offices a real source of income that might be theirs, if only they were willing to provide their patients with a service that no one can give quite so well as they. In fact, unless they are willing to take this on as a well-paid feature of their service to their patients, a great many of the children of the land will continue to fall a prey to easily preventable disease and death.

There are at present six procedures, four of them therapeutic and two of them diagnostic, which most doctors would admit without argument that every child should receive. The therapeutic measures (if by therapy we in-

clude prophylaxis, as do most of the textbooks on the practice of medicine), are the following: (a) smallpox vaccination; (b) inoculation against diphtheria by toxoid or toxin-antitoxin; (c) inoculation against typhoid (and paratyphoid, which may well be combined with it); and (d) protection against whooping cough by means of the Sauer vaccine. The diagnostic procedures are (e) the Schick test for immunity against diphtheria and (f) the tuberculin test, preferably the Vollmer or Patch test, though either the von Pirquet or the Mantoux test may be employed instead.

Every one of these is simple, easily performed in the office of a general practitioner without special equipment of any sort. Each one is safe—has been performed countless numbers of times, and has no disagreeable kick-backs or unpleasant after-results. Each one is relatively painless, and can be administered without the fuss the average doctor dreads in his office, if employed with a little attention to the mechanics of diverting the child while it is being done. None of them is expensive for the patient, or time-consuming for the physician who gives it. Though the charge for each is small, the aggregate in any average practice would be sizeable and well worth making an effort to obtain.

Oddly enough none of them requires any great amount of urging on the part of the doctor, though without some attention on his part to the matter of presenting the need for them to the parents of his little patients none of them will be utilized. And yet no phy-

sician can feel quite clear in his conscience if one of his patients develops one of these five diseases, any one of them serious and potentially fatal, without his having warned the parents of their possibilities and of the protection available against them.

My own method of bringing these procedures to the attention of parents is offered not as an ideal course at all, but merely as a technique that has worked about as successfully and efficiently as any other detail of my work with children. Other men may have had more success with mail reminders or office-assistant follow-ups; their experience would be welcome, if only to show other physicians how easy it is to perform this service of prevention to little patients who may die if it is not rendered them.

Sooner or later, in the course of the first few visits, I make it a point to mention rather casually that there are certain benefits that I consider every child is entitled to receive. I also remark that I feel this so strongly that I have protected my own children by means of them, and that I feel it would hardly be fair to avail myself of them without giving other parents at least the opportunity of getting the same sort of protection for their youngsters.

That is about as far as I ever go. But that is enough to provoke the curiosity of the average mother, who is very likely to ask what I mean by that remark. I don't unload a barrage of information, nor do I attempt to explain all six at once. I do however bring to her attention the one or two of these measures I consider the child stands most in need of, and can usually make her see that it is wise to avail herself of these at once or in the very near future.

Suppose the mother's interest is not aroused? I may mention the subject

casually again some time later, so as to be sure I have done my duty in the matter. However I do not consider it any part of my duty to continue to hound parents into taking measures to protect their children against these universally dreaded diseases. My conscience is clear. But, as I say, this is usually all that is necessary to produce results.

But some one will say, can't all this be done by the schools? And isn't it being done already? And why should people be willing to pay their own doctor for something they can get for nothing? The answer is obvious to each of these questions. Answer One: It can; but so can all the rest of the private practice of medicine; yet most doctors do not feel that private practice ought to be relegated to state agencies. Answer Two: It is being done for some children, yet we know it should be done for all. Answer Three: For some strange reason people are willing to pay their own doctors for services they could get free elsewhere; if they were not, the free clinics would be overwhelmed and private practitioners would be extinct.

But let's look at these six procedures and the need for them and see what is being done about them today. First comes Smallpox, a disease that has at one time or another been almost completely eliminated from most civilized communities. So successfully has this been done that American physicians today don't think much about protecting their patients against it. And yet as soon as an unvaccinated generation comes along it is only a question of time before an imported case invades the community and maims and kills until vaccination checks it, too late of course to help those already stricken. Today the U. S. Public Health Service and the schools, with their school doc-

tors, both branches of socialized or state medicine, are the only agencies making a serious attempt to vaccinate against smallpox.

Diphtheria has been eliminated from many communities which have practiced prevention by the use of either toxoid or its predecessor, toxin-antitoxin. Our own State of North Carolina has just passed a law making such protection mandatory upon parents. Do you think vast numbers of children have been thronging the offices of their physicians as a result? I haven't found it so. Or do you think that the parents who have taken their children to their own physicians have found a prompt and cheerful response to their requests for protection? If you do, just chat with some of the school and public health nurses who've sent them there and see what the response actually has been.

Typhoid fever has been stamped out in many communities. This has been done by wholesale inoculation of individuals, as well as by safeguarding water supplies. By whom? County health officers (socialized medicine again). Yet your patients and mine are constantly being exposed to carriers; and they eat in unsanitary restaurants and drink from surface springs and wells. What are we doing to protect them?

Whooping cough protection is not yet 100 per cent effective, but it helps a lot, both in preventing and in ameliorating symptoms when it does not prevent. Shall socialized medicine take this over in the schools, or shall we make it available to our patients in our private offices?

The Schick Test means immunity against diphtheria, but it does not mean the permanent immunity we once thought it did. I know this now; and I'm not likely to forget it since my own

son, protected by inoculation and proved immune by a negative Schick some years ago, came down with diphtheria at college a year ago. How many times have you done even a first Schick in your office, let alone a "repeat" after two or three years?

Of how many children under your care can you say positively that they are free from childhood tuberculosis? Quite a number, perhaps; but if so, it is probably because you live in a state like North Carolina or one of a few other preventively progressive commonwealths where the schools are administering the Vollmer, the Mantoux or the von Pirquet Test—more socialized medicine! Yet parents dread tuberculosis for their children; many of them would welcome such a test, followed if necessary by a chest picture, to assure them of their freedom from the disease or inform them of the necessity of treating it, only if they were to be told about it by their doctor, the only person whom they believe unhesitatingly in matters of health. Tuberculin diluted for performing the Mantoux test is good only for a month. When did you receive your latest vial of it?

We've all of us done our share in criticizing state medicine. Yet, with the exception of a certain number of pediatricians and a small percentage of general practitioners, we have calmly and without discussion abrogated our function in regard to these six procedures, all of which are rightfully a part of the function of private practice. We have not only failed to bring them and their benefits to the attention of a large class of people who look to us as their instructors in matters of health, but when in rare instances they have asked for these various protections we have let them see that for the most part we were not

interested in making them available. Is it any wonder that people are beginning to think that private physicians are not interested in the prevention of disease?

The public has a way of getting what it needs, though at times slowly and at long last. These six procedures have been found to be absolutely indispensable in controlling the incidence of five of our most serious diseases—diseases that, unchecked, produce appalling morbidity and mortality among our patients, and especially among our little patients.

I have made no mention of other, newer preventive procedures—scarlet fever toxin, tetanus toxoid for active instead of passive immunity, measles prevention, etc.—not because they have

no place in private practice, but because the medical profession is not yet sold as to their desirability for universal use. I have confined this discussion to the six simple, safe, painless, “universally-admitted-as-desirable” procedures, as to which I believe there is no reasonable question on the part of the great mass of the profession.

The folks are going to get these for themselves and especially for their children. They can get them from some branch of state medicine, or they can get them from you and me. Which is it to be? If not from us, then at least let's be good sports enough not to criticize when some other agency assumes the role we have declined to assume, and when the income that could easily and properly have been ours fails to materialize.

Edgecombe's Traveling Clinic

By F. E. WILSON, M.D.

Health Officer, Edgecombe-Greene Health District

WE believe we have found a solution to some of our health problems in Edgecombe County. It is in the form of a mobile clinic which is fully equipped and is owned and operated entirely by the local health department.

The need has long been felt by health workers in the rural areas for a better system of conducting county clinics which embraces every phase of clinical work, namely, maternity and infancy centers, syphilis clinics, and typhoid and diphtheria immunization clinics. This need was particularly apparent in Edgecombe, which is a large rural county. We had been trying to conduct eight maternity and infancy centers a month in the homes of colored midwives, schools, churches, and vacant

store buildings. Furthermore, we were holding seven syphilis clinics each week in similar places and in the waiting room of a small railroad station. None of these places were permanent or equipped in any way for such work. Lights, heat and water were unavailable, and the sterilizers and sterile syringes had to be carried in the nurse's car. There was no privacy for any examination or intimate treatment of the patients.

The Edgecombe County Chapter of the Red Cross was approached in regard to the purchase of a mobile unit in which to conduct our county clinics. The members unanimously agreed to give us \$450, provided we could obtain the additional \$350 necessary to purchase an \$800 specially built house

trailer shell. The administration of the Smith Reynolds Foundation for Syphilis Control granted us permission to apply any balance left in our budget towards the purchase and equipment of our proposed traveling clinic. Since the balance left in our Reynolds fund was not quite sufficient to fully equip the trailer, most of our general budget balance was used to put the clinic into operation. The total cost of the traveling clinic, fully equipped and put into operation, was approximately \$1,100.

We had debated as to whether a truck similar to a school bus or a house trailer type of mobile unit would best suit our needs. The trailer type was selected because it was more economical to operate, the floor level was lower, and a nurse could tow it with her car. This latter reason is important because many of the clinics are held by physicians in the small communities, and the nurse could not well be asked to drive a truck. Since the terrain of Edgecombe County is generally flat and the highways good, no unusual strain is placed on her car.

Electric current is available in every small town and community in the county. At each clinic point one store, filling station, or community house was selected as a waiting room with lights, heat, and toilet facilities for the patients. Permission was given at every selected clinic stop for these facilities to be used without cost. The cooperation of the public in this manner has been excellent.

The trailer body is 19 feet long and 7½ feet wide with a door on each side at opposite ends. Each door has an additional screen door that can be fastened into the outside so that both screened and outside doors can be operated as one or as separate doors. There is a large storage compartment at the rear with a drop door on the outside. The color is amphibian green with a

silvered top and white lettering on the sides and back. Every window is screened and opens outward, and there is an adjustable step at each door. The trailer is equipped with electric brakes.

There are two rooms inside with double sliding doors which separate the clinic room from the examining room. The clinic room is equipped with a hidden water storage tank which is connected with the sink by a hand pump. The refrigerator is large enough to hold 50 pounds of ice and all the biologicals necessary for many clinics. A clerk's table and a treatment table are in addition to the work bench which extends across the front of the trailer. Overhead cabinets are plentiful and furnish adequate storage space. Two full length wardrobe closets, one of which has been converted into a filing cabinet for records, form part of the dividing partition. The examination room is equipped with white examining room furniture including a small desk. This room is furnished with venetian blinds to afford privacy and ventilation.

The clinic is adequately equipped with a wall sphygmomanometer, sterilizers, and other medical instruments for any usual clinical examination. Many bracket lights and electric outlets are available for light, current for fans in summer, and heaters in winter. The ceiling and walls are insulated against heat and cold.

One nurse is in charge of the traveling clinic and her car is equipped to tow it. The clinic schedule is arranged so that she serves every clinic outside of Tarboro and still have ample time to work her territory, giving her a generalized program. Follow-up work is done by each nurse in her own territory. A male venereal disease clerk has recently been added to work in these county clinics and to do some follow-up work on delinquents.

The clinic is a great advertising feature and plays an important role in our program of health education. The public seeing the clinic en route is aware of the constant progress in health work, and the patients seeing the trailer are reminded of our services to them. This automatically increases the attendance and decreases the number of delinquents at each center. Many people were not aware that week after week and month after month a clinic was held in their community, but that is not the case now.

Through the aid of the State Board of Health our maternal and infant centers have increased in size and in importance, and they continue to be hubs around which much health work is done. It is through these centers that we get our first contact with many patients who otherwise would have gone without much needed prenatal advice, or infants which would have been without immunization. The value of such a program is shown in comparing the infant mortality rate of Edgecombe County which was 110.6 per 1,000 live births in 1934 with the same rate of 85.8 in 1936, and again with 80.1 in 1939. The number of expectant mothers attending our centers in 1937 was 521 as compared with 634 in 1938. The maternal mortality rate in 1937 was 4.5 per 1,000 births as compared with 2.4 in 1939.

By co-ordinating the work of our colored nurse, who devotes her entire time to the maternal and infancy work and the supervision of midwives with our new system of clinical work, we hope to publicly advance the idea that prenatal and infant work is one of the fundamental phases of public health service. It cannot be done with efficiency and progress without the knowledge and cooperation of the entire community, and the community cannot

know these things unless we give them a constant reminder.

Our M. and I. Center at Dunbar has been operated monthly for several years, and when it was changed to one-half mile down the road to the community store to secure electricity for the trailer, the store owner said, "I knew you had a clinic up there a couple of years ago but didn't know you still had it." He now takes pride in the clinic rolling up to his store and offers assistance to the point that he notifies prospective patients about it. This case is typical of the changes we have made through the use of our traveling clinic.

THREE WORDS OF STRENGTH

By SCHILLER

There are three lessons I would write,

Three words as with a burning pen
In tracings of eternal light

Upon the hearts of men.

Have hope! Though clouds environ
'round

And gladness hides her head in scorn,
Put thou the shadow from thy brow—
No night but hath its morn.

Have faith! Where'er thy bark is
driven—

The calm's disport, the tempest'
mirth—

Know this: God rules the hosts of
heaven,

The inhabitants of earth.

Have love! Not love alone for one,

But man, as man, thy brother call,
And scatter, like the circling sun,
Thy charities on all.

Thus grave these lessons on thy soul.

Hope, faith and love; and thou shalt
find

Strength when life's surges rudest roll,
Light when thou else were blind.

—From *The Volta Review*.

Diphtheria Deaths and Death Rates for 1938 by States

		<i>Deaths</i>	<i>Rate</i>			<i>Deaths</i>	<i>Rate</i>
Alabama	102	3.5	Nebraska	14	1.0		
Arizona	32	7.8	Nevada	2	2.0		
Arkansas	99	4.8	New Hampshire	4	0.8		
California	96	1.6	New Jersey	31	0.7		
Colorado	38	3.5	New Mexico	28	6.6		
Connecticut	10	0.6	New York	37	0.3		
Delaware	2	0.8	North Carolina	168	4.8		
District of Columbia.....	7	1.1	North Dakota	7	1.0		
Florida	31	1.9	Ohio	96	1.4		
Georgia	117	3.8	Oklahoma	117	4.6		
Idaho	3	0.6	Oregon	11	1.1		
Illinois	119	1.5	Pennsylvania	103	1.0		
Indiana	83	2.4	Rhode Island	1	0.1		
Iowa	22	0.9	South Carolina	64	3.4		
Kansas	18	1.0	South Dakota	9	1.3		
Kentucky	111	3.8	Tennessee	112	3.9		
Louisiana	72	3.4	Texas	241	3.9		
Maine	18	2.1	Utah	5	1.0		
Maryland	17	1.0	Vermont	5	1.3		
Massachusetts	20	0.5	Virginia	122	4.5		
Michigan	43	0.9	Washington	10	0.6		
Minnesota	13	0.5	West Virginia	67	3.6		
Mississippi	83	4.1	Wisconsin	16	0.5		
Missouri	116	2.9	Wyoming	6	2.6		
Montana	8	1.5					

Diphtheria Cases and Deaths for 1939 by Counties

		<i>Cases</i>	<i>Deaths</i>			<i>Cases</i>	<i>Deaths</i>
Alamance	69	2	Cabarrus	49	6		
Alexander	6		Caldwell	30	2		
Alleghany	3	2	Camden				
Anson	19		Carteret	26	3		
Ashe	4	1	Caswell	25	1		
Avery	1	1	Catawba	40	1		
Beaufort	31	2	Chatham	11	1		
Bertie	9	1	Cherokee	5			
Bladen	13	1	Chowan	8			
Brunswick	12		Clay	3	1		
Buncombe	67	2	Cleveland	39			
Burke	41	2	Columbus	33	2		

<i>Cases</i>		<i>Deaths</i>			<i>Cases</i>	<i>Deaths</i>
Craven	22	2	Nash	66	5	
Cumberland	35	1	New Hanover	27	1	
Currituck			Northampton	12	1	
Dare	3		Onslow	10		
Davidson	60	2	Orange	6		
Davie	5	2	Pamlico	7	2	
Duplin	33	2	Pasquotank	5	1	
Durham	50	2	Pender	13	1	
Edgecombe	38	4	Perquimans			
Forsyth	47	4	Person	4		
Franklin	22		Pitt	80	2	
Gaston	69	5	Polk	8	2	
Gates	2		Randolph	39	2	
Graham	1		Richmond	9	5	
Granville	8	1	Robeson	14	1	
Greene	37	1	Rockingham	52	4	
Guilford	97	9	Rowan	45	2	
Halifax	48	7	Rutherford	35	3	
Harnett	26	1	Sampson	18		
Haywood	40	1	Scotland	2		
Henderson	2	2	Stanly	12		
Hertford	7		Stokes	7		
Hoke	12		Surry	45	4	
Hyde			Swain	5	1	
Iredell	60	1	Transylvania	4	1	
Jackson	3		Tyrrell	6		
Johnston	51	2	Union	20	1	
Jones	5		Vance	19	2	
Lee	20	2	Wake	101	12	
Lenoir	33		Warren	19		
Lincoln	28		Washington	4	2	
McDowell	12		Watauga	7	2	
Macon	3		Wayne	31	4	
Madison	25	3	Wilkes	12	3	
Martin	29	3	Wilson	25	4	
Mecklenburg	52	6	Yadkin	21	1	
Mitchell	22	5	Yancey	16	2	
Montgomery	2					
Moore	10		Total	2368	168	

The National Society for Crippled Children

By J. T. BARNES

State Supervisor, Crippled Children's Department
N. C. State Board of Health

A DEMOCRACY, if it is to progress, must "March forward upon the feet of its little children." That this axiom is true is evidenced in the manner in which America has consciously striven to improve conditions under which its children are born, live and develop. For many years the crippled child was not adequately provided for, and it remained for the gathering of essential forces growing out of the experience of a people to demand progress in this field. Aside from the marked scientific developments on the professional front, there was a need for an activated "social force" in formulating and promulgating a crippled children's policy for the nation. Such a "force" has found expression in the National Society for Crippled Children and the activity of its founders and followers, which includes not only scientific and professional leadership, but also an intelligent and influential laity which has given vitality and progressiveness to this leadership.

North Carolina is honored and privileged to entertain the National Society for Crippled Children in its Annual Convention at Asheville, N. C., October 5-10, 1940, and the leadership which the convention will attract to our State will undoubtedly leave something of value for us. It is the hope of the guest society in North Carolina that there will be representation from every state and from neighboring nations whose people are interested in the problem of the crippled child and in developing programs providing services for him.

The preliminary program has now been formulated and announced. The opening session on Sunday, October 6, centers on "The National Society—Our Job," and will entail reports of Society officials of the previous year and outline of objectives for the next. President E. W. Palmer's address is usually an inspiring convention highlight.

The session for October 7 has a program built on the subject "Services Involved in the Orthopaedic Care and Treatment of Crippled Children," which brings to the State a number of nationally recognized physicians who are devoted to the constant task of developing and extending scientific and professional services to crippled children. This presentation will be of vital interest both to the profession and the laity.

Many other interesting features are included in the program which extends to October 10 and to which the interested public is invited. And, incidentally, the convention will be conducted at the season of golden autumn when visitors may delight in the inspiring natural beauty of Western North Carolina.

It is the hope of the Society that representatives of local health and welfare agencies—health officers, nurses and social workers—all of whom are vitally concerned with the crippled child, will plan to spend time at the convention and secure helpful suggestions to take back to the community in building "forces" to meet the needs of the crippled child.



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Infection of Air by Sneezing



The above photograph illustrates graphically how tuberculosis and other infectious diseases are sometimes transmitted. The photograph and the story on page 8 is published by courtesy of the Department of Biology and Public Health, Massachusetts Institute of Technology.

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The State Board of Health publishes monthly **THE HEALTH BULLETIN**, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	German Measles	Scarlet Fever
Appendicitis	Health Education	Smallpox
Cancer	Hookworm Disease	Teeth
Constipation	Infantile Paralysis	Tuberculosis
Chickenpox	Influenza	Tuberculosis Placards
Diabetes	Malaria	Typhoid Fever
Diphtheria	Measles	Typhoid Placards
Don't Spit Placards	Pellagra	Venereal Diseases
Eyes	Residential Sewage	Vitamins
Flies	Disposal Plants	Water Supplies
Fly Placards	Sanitary Privies	Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY


The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Baby's Daily Time Cards: Under 5 months;
Prenatal Letters (series of nine	5 to 6 months; 7, 8, and 9 months; 10
monthly letters)	11, and 12 months; 1 year to 19 months
The Expectant Mother	19 months to 2 years.
Breast Feeding	Diet List: 9 to 12 months; 12 to 15
Infant Care. The Prevention of	months; 15 to 24 months; 2 to 3
Infantile Diarrhea	years; 3 to 6 years.
Table of Heights and Weights	Instructions for North Carolina Midwives.

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Notes and Comment

By THE EDITOR

Tuberculosis

FOR more than twenty-five years it has been the policy of the State Board of Health and the Editor of THE HEALTH BULLETIN to place major emphasis on tuberculosis in at least one of the twelve monthly issues of the publication. The present editor has used the November number for that purpose most of the time for the past seventeen years. In one respect it is appropriate to do so. In this month, since the first landing of permanent English settlers, it has been the custom to have a day of Thanksgiving in November. In dealing with the problem of tuberculosis there is a great deal to justify sincere Thanksgiving.

In less than twenty-five years the case and death rate from this disease has been cut in half. The figures published in THE HEALTH BULLETIN annually and on page seven again this year record the steady if small decline again. The public support in the effort to eradicate the disease has been more liberal in personnel and money than in all other public health problems combined, with the possible exception of the present efforts toward control of venereal diseases.

During the past year much progress has been noted. To mention only a few items among many, the new Western North Carolina Sanatorium at Black

Mountain has been completed and fully equipped. The mother plant at Sanatorium has had much new equipment added, and plans are well on the way for construction of the third large State owned and operated sanatorium at Wilson.

The various new county sanatoria are all operating well with constantly enlarging and expanding facilities. In addition to the specialized forces employed and the large amount of money the State and the patients themselves and their families are spending, the part the local health departments through the investigation and follow-up work of the health officers and nurses are devoting to the tuberculosis work is immense.

The opinion in this quarter is that with the full application of premarital laws and school children's protection, the acceptance unequivocally of their responsibility for early diagnosis by the medical profession, and the extension of full-time local health organizations to embrace all of the few remaining counties, from now on the problem of control and elimination of tuberculosis should be a declining one.

It is well, however, to understand that there is much to be done before the disease is gone from the State. In many sections today there are cases in

the quiescent and latent stages and some active which are not known to exist. To mention only one such case, it is recalled that in its widespread personal health service some time ago information came to the Editor of THE BULLETIN of a serious situation described by the informant in a rural section. The district health officer was requested to investigate if he had not already done so. He complied at once and reported later that he went immediately to the rather remote community to the home of the family to find a young girl dying of tuberculosis at the time (she died before he completed his visit). Two other members of the family were found to have it in the early stages. It is interesting to note that a clinician from the State Sanatorium had held what was thought to be a county-wide diagnostic clinic in that county only a few weeks previously. He had been aided as usual by the local health officer and nurses. But this family had never heard about it and the health department had never known of the condition of the family.

Another case, probably a better illustration of many of the things yet to be done about tuberculosis, may be noted in the death a few weeks ago of a colored employee of the State Board of Health. For twenty-one years this intelligent Negro had been a faithful and trusted messenger at the Central Office of the Board here in Raleigh. He had been honorably discharged from the army where he served in an overseas division in the World War before coming to work for the Board. A year or two ago he became ill and was sent to a veteran's hospital for a stay of several weeks. He later returned to his work, but some time ago complained of being ill, went home and went to bed.

In a few days he was sent to a Raleigh hospital where he died two days after admission. No diagnosis having been made by his attending physician, an autopsy was done which indicated acute miliary tuberculosis. He had not had a cough. He had shown few if any of the classical symptoms of tuberculosis. And yet he was dead within three weeks after he had to quit work.

This case is mentioned solely to show the readers of THE BULLETIN that a diagnosis of tuberculosis like that of many other diseases is sometimes a difficult problem. The safe policy for an individual and surely for the head of a family to follow is choice of a competent family physician and then one of close cooperation with him.

Now, to save at least one rather noisy medical critic of the State Board of Health some trouble, it might be said that the ten or twelve physicians connected with the staff at the Raleigh office of the Board rate about average as physicians. But they are not now keyed to the responsibility of clinical diagnosis and treatment as a part of their daily work. That is a job for the practicing physicians. In fairness, however, to the staff physicians it may be said that one member urged rest in bed and competent medical treatment for the Negro, and later predicted the outcome of the autopsy. That member is no smarter than any of the others. He had simply had experience as a practicing physician back in the days when a doctor had to work for a living and when a diagnosis depended on the physician's ability and efforts and not on the X-rays and laboratory. He simply recalled some rather vivid experiences in his practice of earlier years.

A general summary of this editorial "might" read something like this:

1. Tuberculosis is on the way out.

2. Before it goes a lot more work must be done.

3. Any young physician before specializing or locating permanently should be compelled to practice medicine for at least five years at a cross-roads in the country or in a small town and to have to live on his earnings while doing so.

4. No physician should be employed as a local health officer or as the executive head of a division of the State Board of Health until he meets the qualifications outlined in number three above. The same to apply to all other specialties in the field of medicine.

5. While it might go a little hard with some of them, the experience would teach them more than they would ever get in any other way. It would teach them more of medicine and of human needs and, above all, values.

Finally, such a plan would provide medical care for the so-called one-third of the population who it is so widely proclaimed do not now get it.

* * *

Plight of the North Carolina Flood Sufferers

Last month we quoted from some of Dr. Lupton's reports on the ravages of the floods in the east with some comment based on information from other sources. Since then, however, we have obtained some first-hand information. A few days ago while in Jackson County with Dr. C. N. Sisk, the District Health Officer, at Sylva, we met up with an old and valued friend, Dr. Delos D. Hooper of Sylva. Since the death of Dr. J. H. Saunders of Williamston and Dr. J. F. Landen of Duplin, Dr. Hooper together

with Dr. Moir S. Martin of Mount Airy and the writer are the three remaining members of our medical class living in North Carolina. As Martin and Hooper are both young men, the "old man" member of the trio was much pleased to visit a while with Dr. Hooper and his fine wife in their beautiful home at Sylva.

Before greetings were over, Hooper proposed that we accompany him some twenty miles high up the mountains in the old Tuckasee section of southern Jackson. He insisted that he would get us back into Waynesville by night-fall. His object he said was so we could see first-hand some of the terrible ravages wrought by the flood. And so we went and saw mile after mile of ruined crops and damaged homes, and farms, fields, bridges, roads, forests and everything. Many steel bridges swept away and twisted as easily as match boxes. One great concrete bridge near Cullowhee State College (where Dr. Hunter and his group are doing such fine educational work) had been warped and split and turned over. At least five persons are known to have been drowned in that section alone. Far up the eastern prong of the Tuckasee River we saw great trees and mill logs piled all up in corn fields. Several large houses had debris left on the small outhouses and on the treetops in the yards. One family in that section living in a nice home near the river with a good field of corn between the house and mountains in the background escaped death through a miracle. The steady downpour of rain all over the mountain area simply meant such a volume of water everywhere that nothing could withstand its force. The mighty flood spilling off the mountains cut a great ravine some three hundred feet wide carrying huge trees, loose boulders and everything

with it. As this roaring torrent with the rocks, uprooted trees, etc., came down in increasing force it headed directly toward the farm house. But here is the miracle. When within about two hundred feet of the house the flood tide with all the dangerous debris suddenly split into two currents, right on level ground in the cornfield and without any apparent cause. The flood divided like the two forks of a split stick, each cutting its way to the river a few yards in front of the house, passing about fifty feet on either side of the house. The house was untouched and the family not harmed. Not so fortunate, however, were the family in another house near by. The father was awakened and jumped out of bed in pitch darkness to investigate and struck water knee deep in the room, and the current swirling through the entire house. He succeeded in getting his wife and children out of the house to safety just a few minutes before the house and all their belongings were swept away.

The State Highway forces have done a wonderful piece of work in restoring so quickly the main highways, but it will be months before the country people living in all these stricken areas can hope to get their roads and bridges back to satisfactory service. And much of the farm land is ruined forever and can't be restored.

Dr. Hooper, who is one of the most beloved and trusted physicians in Jackson County, was much distressed that we could not get across the river to

visit his 85-year-old mother still living in a large white "picture" house at the foot of the mountain on the opposite side and facing the river. Her home, owing to foresight in location, escaped damage. But the farm itself is irreparably damaged. These are only one or two illustrations among thousands, and this writer feels that all the rest of the people of the State should extend assistance to every one of these flood sufferers in all sections of the State for the next four or five years.

The Red Cross and other emergency aid was, and always is, invaluable when calamity strikes. But when the immediate emergency passes such forces fold up and go on to other places when and where help is needed in the same way.

The chief sufferers in all these floods this year are farm people. There is no Red Cross Roll Call or Community Chest or Salvation Army for them. But men, women and, most pathetically, little children in all these areas are going to suffer a lot this winter, even with all available help. But the real stress, like the Dust Bowl sufferers in the West, is going to come next year and the year after for all of them.

The forces of rehabilitation should stay with the problem until all of them are back on a self-sustaining basis again.

DEATHS FROM TUBERCULOSIS OF THE RESPIRATORY SYSTEM—BY COUNTY AND RACE: 1939

Total Deaths (Tuberculosis, All Forms) 1,812

COUNTY	BY PLACE OF DEATH			BY PLACE OF USUAL RESIDENCE			COUNTY	BY PLACE OF DEATH			BY PLACE OF USUAL RESIDENCE		
	Total	White	Colored	Total	White	Colored		Total	White	Colored	Total	White	Colored
Total, State	1660	662	992	1456	538	913	Johnston	15	8	7	20	10	10
Alamance	7	4	3	8	5	3	Jones	3		3	4		4
Alexander	4	2	2	5	2	3	Lee						
Alleghany				1	1		Lenoir	34	7	27	36	7	29
Anson	7		7	12	1	11	Lincoln	3	3		3	3	
Ashe	4	3	1	6	4	2	McDowell	6	5	1	6	5	1
Avery	10	9	1	8	7	1	Macon	4	4		6	6	
Beaufort	22	6	16	29	7	22	Madison	3	3		4	4	
Bertie	11	1	10	11	1	10	Martin	17	4	13	21	5	16
Bladen	7	1	6	10	2	8	Mecklenburg	62	19	43	71	21	50
Brunswick	4	2	2	4	1	3	Mitchell	6	5	1	6	5	1
*Buncombe	321	198	122	73	43	30	Montgomery	7	6	1	7	6	1
Burke	17	17		8	7	1	Moore	13	7	6	11	3	8
Cabarrus	13	5	8	20	9	11	Nash	30	6	24	29	7	22
Caldwell	3	2	1	4	3	1	New Hanover	19	5	14	20	4	16
Camden	2		2			2	Northampton	14		14	15		15
Carteret	4	4		6	6		Onslow	7	1	6	7	1	6
Caswell	8	4	4	8	4	4	Orange	5	3	2	9	5	4
Catawba	11	8	3	15	9	6	Pamlico	2	1	1	3	2	1
Chatham	8		8			9	Pasquotank	13	3	10	13	3	10
Cherokee	2	2		2	2		Pender	3		3	6	2	4
Chowan	6		6	8	1	7	Perquimans	1		1	1		1
Clay							*Person	11	2	8	12	3	8
Cleveland	13	7	6	16	9	7	Pitt	30	2	28	31	2	29
Columbus	19		19	18		18	Polk	2	1	1	3	2	1
Craven	25	1	24	27	2	25	Randolph	9	7	2	12	10	2
Cumberland	26	11	15	28	12	16	Richmond	11	1	10	12	1	11
Currituck	1	1		1	1		*Robeson	20	3	16	24	5	18
Dare	2	2		3	3		Rockingham	22	12	10	29	15	14
Davidson	6	4	2	10	8	2	Rowan	14	5	9	15	5	10
Davie	3	2	1	3	2	1	Rutherford	10	7	3	11	8	3
Duplin	13	4	9	15	6	9	Sampson	14	3	11	18	6	12
Durham	47	19	28	53	17	36	Scotland	16		16	19	2	17
Edgecombe	23	5	23	31	5	26	Stanly	8	5	3	8	5	3
Forsyth	79	15	64	88	17	71	Stokes	1	1		1	1	
Franklin	7	1	6	10	2	8	Surry	13	11	2	16	13	3
Gaston	13	10	3	16	10	6	*Swain	4	2	4	4	2	
Gates	1		1	2	1	1	Transylvania	4	4		4	4	
Graham	1	1		1	1		Tyrrell	5	4	1	5	4	1
Granville	11	5	6	13	5	8	Union	4	3	1	6	4	2
Greene	10		10	10		10	Vance	10	6	4	13	7	6
Guilford	52	24	28	54	24	30	Wake	46	19	27	37	11	26
Halifax	20	5	15	26	6	20	Warren	7		7	7		7
Harnett	6	4	2	10	5	5	Washington	4		4	5		5
Haywood	6	5	1	8	7	1	Watauga	3	3		3	3	
Henderson	9	4	5	11	6	5	Wayne	87	13	74	43	13	30
Hertford	12		12	13	1	12	Wilkes	14	9	5	14	9	5
Hoke	66	18	48	4	1	3	Wilson	43	12	31	48	15	33
Hyde	4	3	1	5	3	2	Yadkin	1	1		1	1	
Iredell	16	5	11	19	7	12	Yancey	7	7		7	7	
*Jackson	6	5		6	5								

* Buncombe—1 Indian (non-resident of State for Buncombe).

Jackson—1 Indian.

Person—1 Indian.

Robeson—1 Indian.

Swain—2 Indians.

Infection of Air by Sneezing

SANITARIANS recognize the dangers of the spread of respiratory infections by microorganisms from the mouth and respiratory passages introduced into the air in the droplets given off in coughing and sneezing. Since most of such droplets are not visible under ordinary conditions, the risks of infection by this means have not been appreciated by the lay public.

The photograph on our front cover, taken by Prof. M. W. Jennison, Department of Biology and Public Health, Massachusetts Institute of Technology, shows graphically the expulsion of droplets in a sneeze. The droplets are "stopped" in full flight.

The picture was taken using the Edgerton technique of high-speed photography, which substitutes an instantaneous flash of light for the opening and closing of a camera shutter. This stroboscopic light illuminates the object to be photographed with an intense flash of short duration. This technique "stops" objects in motion by providing a duration of flash (exposure time) so short that the object does not move any appreciable distance during exposure. The light was placed in such a position that the droplets were illuminated with a dark-field effect, thereby standing out sharply even in daylight, and giving photographic images larger than actual droplet size. The time of exposure was about $1/30,000$ of a second.

The photograph shows a violent, unstified sneeze. In such sneezes, the number of droplets expelled are in the thousands, varying with the intensity of the expiratory effort. The number of bacteria per sneeze may be in the thousands. Most droplets are under 2 mm. in diameter, and many are less than 0.1 mm. The "muzzle velocity" of some droplets is as great as 150 feet

per second. Large droplets may be expelled to distances of 12 feet, but the majority do not travel more than 2 or 3 feet.

The involuntary closing of the mouth near the end of a sneeze tends to form a restricted orifice, resulting in the production of more and smaller droplets. The number of droplets issuing from the nose in an unstified sneeze is insignificant compared with the number expelled from the mouth. Cough droplets are, in general, fewer in number and larger than sneeze droplets. Some droplets fall to the ground; others evaporate, leaving their bacteria suspended in the air, through which they may be disseminated by air currents. Covering the mouth in coughing or sneezing is effective in preventing introduction of droplets into the air.



The above picture of eight-year-old Tommie Hobson of Yadkinville, Route 1, doing his full part to help feed the world, is sent to us by his mother. Mrs. Hobson says that she has depended on information in *The Health Bulletin* for several years to keep her children in perfect health. She says she thinks every family in the State should read the *Bulletin* and that their family look for their monthly copy with as much interest as they do their daily paper.

The Mind and the Smash-up

JAMES WATSON, M.D.

Director, Division of Mental Hygiene
Department of Charities and Public Welfare

EVERY once in a while some thoughtful student of the place of medical theory and practice in human affairs suggests a new approach to a common problem. Such an event is found in an article by Dr. L. S. Selling entitled "The Mental Hygiene Aspect of the Traffic Accident," which appears in the American Medical Association Journal of September 14. The data underlying the article are derived from 19 years of observation of traffic offenders in the Psychopathic Clinic of Detroit. The author is a doctor of public health and a psychiatrist.

Officials working in the interests of public safety keep before us the appallingly large figures relating to traffic accidents. In most of our minds, speeding, wet roads, bad weather, intersections, mechanical defects in cars, drunken drivers, and disregard of traffic laws loom up as causes. Safety campaigns focus attention on these things. Dr. Selling pays due attention to all these factors, but from his long years of careful study quotes figures which tend to show that of vastly more importance than them all is the state of mind of the individual involved. The most important approach to the problem of traffic accident prevention he declares is that of mental hygiene.

Of the large number of accidents reviewed for this study the majority occurred on straight roads, in clear weather, on dry pavements and in cars without mechanical defects. The outstanding factor in causing the accidents is traced to defects in the human element. Dr. Selling in his paper points out what some of these defects are. He mentions mental deficiency and

mental disorder as playing a minor part, and goes on to speak of the many things which interfere with the mental machinery of "accident-prone" drivers. These are well summarized by Dr. Daniel Blain, who led the discussion of the paper at the AMA meeting in New York . . . "people's emotions, their rivalries, competition, carelessness, the deep-laid gambling instinct, the belief in the magic of their own luck, the unwillingness to face the facts of their own crashing, the unconscious motives of aggression, revenge, compensation for inferiority, or the Jehovah complex that 'I am better than any one else and deserve the whole road,' and so on." Concerning alcoholism it was noted that a small amount of alcohol taken on an empty stomach by a driver under tension was a serious factor.

The author indicates that the mental hygiene approach should be two-fold: educational and clinical. For education he would acquaint the public with the results of this research into accident causation by giving them the facts over the radio, in newspapers, posters on street cars, etc. He would also continue all the forms of education in safe driving now being used, but he would like to see a closer coordination according to the principles of health education as carried on by public health departments. The clinical work would consist of psychologic and psychiatric examinations and treatment, with special reference to the individual's mental condition as related to driving a car. He indicates special lines that this would follow.

The Granville County Tuberculosis Waiting Station



WAITING STATION

Under the leadership of Dr. Ballard Norwood, and with the cooperation of several Oxford civic clubs, the staff of the Granville County Health Department has constructed and modernly equipped the above twelve-bed tuberculosis waiting station. Inside the building one finds a treatment room, a male ward of six beds with complete bath, one female ward of six beds with com-

plete bath and dressing room, and one room for the nurses' quarters with complete private bath.

Maintenance of this establishment, including the employment of a full-time registered nurse, maid service, laundry, telephone, and medicines, is entirely in the hands of the civic clubs, aided by a donation from the local Red Cross Chapter. Food for the patients is served from the nearby kitchen of the County Home. The nurse employed is a graduate of the North Carolina State Sanatorium, and the institution has a routine similar to that of the North Carolina State Sanatorium.

Dr. Norwood, Nurses Chesson and Jones, and the civic clubs of Oxford should be commended for their splendid cooperative accomplishment in their contribution towards the improvement of the health of Granville County.

Arrangement of a New Series of Posters for Health Officers and Educational Specialists

By F. S. FELLOWS, M.D.

Surgeon, U.S.P.H.S. and

Venereal Disease Consultant, State Board of Health

THE United States Public Health Service has recently distributed a circular describing a new series of posters designed for use in connection with venereal disease control activities. Each poster has been designed with one primary objective—to put across at least one pertinent point and make it stick. The Public Health Service plans to release one new poster in the series each month.

These posters are suitable for display on school bulletin boards, gymnasiums, clinic waiting rooms,

etc., and are attractively arranged in color. They are designed to contain information which should convince both taxpayers and potential patients of the importance of a sound local venereal disease control program.

The size of these posters is approximately 22 x 28 inches. Health officers, teachers, or any one interested in securing posters of this kind can order them direct from the Superintendent of Public Documents, Washington, D. C. They are priced at five cents per copy or \$3.75 per 100.

Public Health Work in North Carolina

By R. E. Fox, M.D.

Director, Division of County Health Work

I. Organization and Services—State Board of Health

IT is realized definitely that the protection of the public health of the citizens of the State and Nation is a distinct governmental function. Your State Board of Health is the State agency charged with this responsibility in North Carolina.

Many inquiries come to us with regard to the services which are available to the citizens of the State. The program, as planned, provides for public health services to be rendered either directly by local health departments or indirectly by the State Board of Health with the cooperation of the local health departments. The work of the State Board of Health and the local health departments is chiefly prevention and health education. These services rendered by the State and local health departments augment the curative program as carried on by the medical profession in private practice in providing preventive facilities for those diseases where medical science has developed an effective method of prevention, and through the education of the public, the citizenship is informed of the dangers of the various diseases which occur most frequently and advised to seek medical care in case of illness of any kind.

Many of the local communities in the counties and cities have realized their need for full-time local health services by making local appropriations to which are added State and Federal funds to carry on an effective public health program.

The provisional census figures for 1940 give North Carolina a total of 3,561,990 as compared with the official

census figure of 3,170,276 in 1930. The State Board of Health and the local health services have kept pace with our population growth in providing additional health services to our citizens.

The State Board of Health is composed of nine members, five being appointed by the Governor and four elected by the State Medical Society. The term of the board members is four years. These men elect the State Health Officer, although he must be approved by the Governor. The State Health Officer serves as Secretary-Treasurer to the Board but has no vote in determining Board policies.

The State Health Officer is elected for a term of four years. He selects the State Board of Health staff, subject to Board approval. Board members and the State Health Officer are eligible for re-election or reappointment.

For administration purposes, the staff of the State Board of Health is divided into divisions, as shown in the accompanying organization chart. There are eight divisions, the activities and services of which are so numerous and varied that space will allow only the briefest reference to them in outline form:

A. CENTRAL ADMINISTRATION

1. Policies—programs.
2. Relations with other State departments and extra-state agencies.
3. Personnel—Budget—Accounts.
4. Requisitions.
5. Central file.
6. Library—printing.
7. Publicity service.

B. PREVENTIVE MEDICINE

1. Maternal and child hygiene.
 - a. Prenatal and infant centers.
 - b. Midwife supervision.
 - c. Distribute toxoid for infants and preschool children.
 - d. Location, diagnosis, treatment, and follow-up of crippled children.
 - e. School examinations, including Audiometer tests.
 - f. Allocation of M. & I. Children's Bureau funds.
2. Health Education.
 - a. Health Bulletin—60,000 monthly.
 - b. Preparation, revision, distribution of pamphlets and leaflets.
 - c. Releases to newspapers and periodicals.
 - d. Speakers' Bureau, movies, radio.
 - e. Special personal correspondence in reply to inquiries.
 - f. Posters, maps, charts for schools, clubs, fairs.
 - g. Post-graduate training in pediatrics, obstetrics, prevenception.
3. School Health Coordinating Service (in cooperation with State Department of Public Instruction).
 - a. Teacher health training.
 1. Training the in-service teacher.
 2. Training prospective teachers in state teacher training schools.
 - b. Subjective and objective health teaching in schools.
 - c. Application of protective health measures in the school.
 - d. Extension of teaching and practice measures to the homes by
 1. Parent-Teacher Associations,
 2. Civic organizations.
 - e. Nutrition.
 - f. Physical education.
 - g. Mental hygiene.

C. COUNTY HEALTH WORK

1. Organization and development of local health units (county, city, district).
2. Administrative supervision of local health departments.
 - a. Policies.
 - b. Budgets.
 - c. Allocation of funds from State and U.S.P.H.S. sources.
 - d. Approval of qualifications for personnel.
3. Consultation Service.
 - a. Administration — evaluation of character and content of local service—program planning.
 - b. Sanitation.
 - c. Nursing—Conjointly with Division of Preventive Medicine.
 - d. Record keeping, analysis, and interpretation.
4. Negro Health Education.

D. LABORATORIES

1. Diagnostic Service.
2. Analyses of drinking waters.
 - a. Public supplies periodically.
 - b. Private supplies on request of health officer or physician.
3. Manufacture and Distribution of Preventive Vaccines and Antitoxins.

E. VITAL STATISTICS

Birth, stillbirth and death certificates.

1. Collection.
2. Classification.
3. Indexing.
4. Certification.
5. Tabulation.
6. Compilation.
7. Analysis.
8. Interpretation.
9. Publication.

F. EPIDEMIOLOGY

1. Collection, analysis, publication of morbidity reports.
2. Studies and investigations of epidemics.
3. Consultation service with local health units and with private physicians.
4. Malaria investigation and control.
5. Rodent control.
6. Venereal Disease Control.
 - a. Advisory service to local health departments.
 - b. Distribution of anti-syphilitic drugs.
 - c. Allocation of venereal disease funds.

G. SANITARY ENGINEERING

1. Supervision of water supplies of schools, mills, homes, municipalities, state institutions.
2. Control of sewage disposal—schools, mills, homes, municipalities, state institutions.
3. Milk sanitation.
4. Sanitary supervision of food supplies, eating and lodging places, cafes, schools, shellfish, hotels, bedding, camps, meat markets.
5. Malaria control drainage.
6. Prevention of stream pollution.

H. ORAL HYGIENE

1. Didactic teaching of mouth health.
 - a. School classrooms.
 - b. PTA and civic club lectures.
2. Demonstration teaching of mouth health.
 - a. Examinations.
 - b. Prophylaxis.
 - c. Corrective treatment of underprivileged children under age 13.

I. INDUSTRIAL HYGIENE

1. Surveys of industrial sanitation.
 2. Conservation service to industry and state departments.
 3. Investigation of environmental hazards in industry.
 4. Examination and recommendation of plans for industrial ventilating systems.
 5. Evaluation of methods for control of specific hazards.
 6. Clinical and X-ray examinations of industrial workers.
-

II. Organization and Services— Local Health Departments

At the present time seventy-nine of our one hundred counties have some type of local health service, either a single county unit or district health department. Six of the cities have health departments. These make local health service available to 3,166,395 of our 3,561,990 citizens.

The county boards of health are composed of six members made up as follows: The chairman of the board of county commissioners, the mayor of the county-seat town, and the county superintendent of schools, who serve as ex officio members and meet the first Monday of January in odd years to elect two regularly licensed physicians and one regularly licensed dentist to serve with them. There are exceptions in those counties not having at least two physicians in the county or a dentist, and in the counties where there is no mayor of the county town, the clerk of the Superior Court serves as an ex officio member. The health officer and/or the county physician is elected by the board of health on the second Monday in January of the odd years of the calendar.

In the district health departments the county board of health is still the controlling body within each respective county. However, the State Board of Health recommends the creation of a district executive committee consisting of at least one member from each county board of health which constitutes an advisory body to the district health officer, meeting with the State Health Officer or his representative, in matters pertaining to district-wide services. Any rules and regulations applicable to the district department must be adopted by the several boards of health, and this may cause different sets of rules and regulations to exist within the several counties of the district.

City health department policies are made by the board or committee of the city government designated to perform that function, according to the type of government in effect.

The local health officer is elected by the board and he has the responsibility of employing his personnel.

There are certain recommended procedures which have been adopted by the State Board of Health for local health departments to follow. However, the peculiar health problems in a given community make it necessary for each local health department to adapt its health program to the conditions existing within its health jurisdiction. The local departments carry on a generalized public health program, although, where the staff is inadequate because of lack of funds, it is sometimes difficult to give as much attention to all the public health problems as would be desired.

The minimum expenditure for public health work has been set at \$1.00 per capita. However, there are only three county or district health departments that have attained this goal, with the

assistance of State, Federal, and other agencies, and of the city health departments, only three are spending as much as \$1.00 per capita with the assistance of these same agencies.

The average per capita expenditure for the fiscal year 1939-40 in county or district units was 53c, while in the city health departments the average was \$1.13 per capita. The average for those counties and cities having full-time local health service was 58c per capita.

The following is a brief outline of some of the activities of local health departments arranged according to services rendered by different members of the local staff:

A. HEALTH OFFICER

I. Administrative Duties

1. Health education.
2. Program planning.
3. Public relations and cooperation with other departments and agencies.
 - a. Hospitalization of tuberculous and handicapped.
 - b. Housing and other economic-living problems.
 - c. Safety—the prevention of accidents.
4. Surveys.
5. Distribution of
 - a. Biologicals—vaccines and sera,
 - b. Arsenicals,
 - c. Yeast.
6. Health legislation.
7. Hospitalization.
8. Office Routine—
 - a. Personnel,
 - b. Budgets,
 - c. Finances,
 - d. Conferences.

II. Professional Duties

1. Health Education.
2. Immunization—
 - a. Diphtheria,
 - b. Smallpox,
 - c. Typhoid fever.

3. Epidemiological Investigations.
4. Isolation—quarantine—release.
5. Diagnostic service—
 - a. Consultation,
 - b. Laboratory.
6. Clinics—
 - a. Maternity and infancy,
 - b. Venereal diseases,
 - c. Tuberculosis,
 - d. Crippled children,
 - e. Eye.
7. Special Services—
 - a. Dietary diseases,
 - b. Intestinal parasites,
 - c. Malaria,
 - d. Rabies.
8. Physical Examinations—
 - a. Preschool children,
 - b. School children,
 - c. Teachers,
 - d. Child industry,
 - e. Food handlers.
9. Medical Services of County Physician—
 - a. Institutions,
 - b. Prisoners,
 - c. Court cases,
 - d. Post-mortems.

B. SANITARY OFFICER

1. Health Education.
2. Sanitary disposal of human wastes—
 - a. Privies,
 - b. Septic tanks,
 - c. Sewerage systems.
3. Supervision of foods and food establishments—
 - a. Milk supplies,
 - b. Cafes, hotels, markets, abattoirs,
 - c. Shellfish.
4. Special Services—
 - a. Public buildings and institutions,
 - b. Camp and recreation grounds,
 - c. Swimming pools,
 - d. Malaria control,
 - e. Rodent control.
5. Sanitary surveys and exhibits.
6. Control of animal wastes and other health nuisances.

C. PUBLIC HEALTH NURSE

1. Health Education.
2. Prenatal, natal, and postnatal care.
3. Midwife supervision.
4. Infant, preschool and school health.
5. Adult health.
6. Communicable diseases—
 - a. Acute childhood infections,
 - b. Venereal diseases,
 - c. Tuberculosis.
7. Non-communicable diseases.
8. Nutrition.
9. Orthopedic service.
10. Vital statistics.
11. Mental Hygiene.
12. Reports and records.

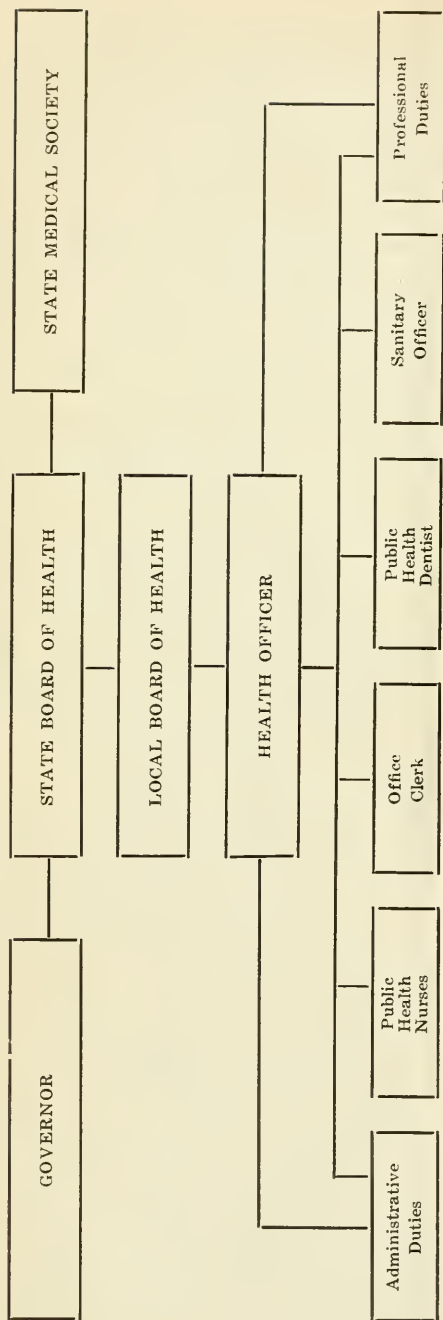
D. PUBLIC HEALTH DENTIST

1. Didactic teaching—
 - a. Children in classrooms,
 - b. Adults in PTA, clubs, community groups.
2. Demonstrative teaching—
 - a. Examinations,
 - b. Prophylaxis,
 - c. Corrections for underprivileged children under age 13.

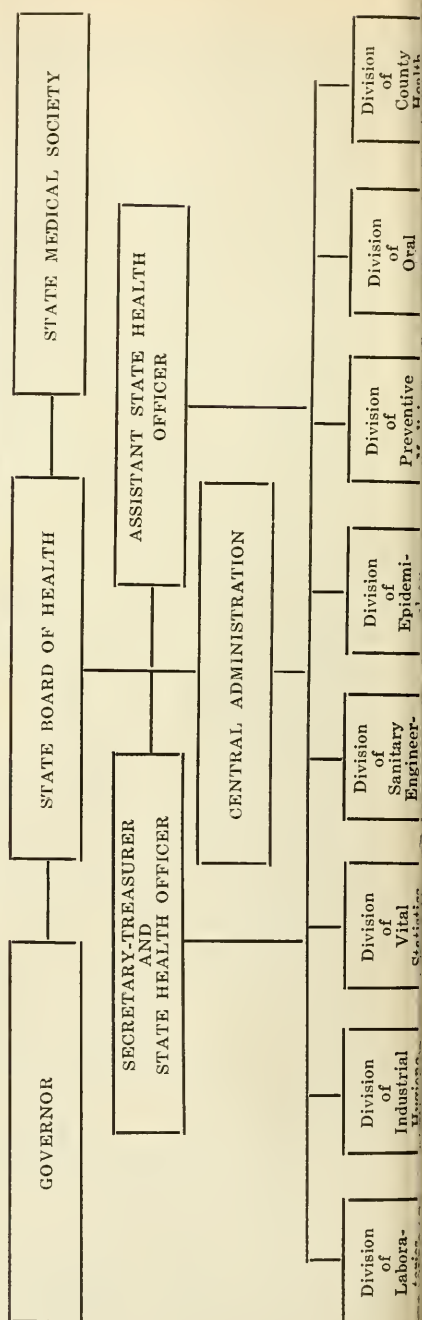
E. OFFICE CLERK

1. Health Education—
 - a. Interpreter of department activities to office public,
 - b. Distribution of health literature,
 - c. Preparation and display of maps, charts, graphs.
2. Vital statistics (secure reports)—
 - a. Births,
 - b. Deaths,
 - c. Communicable diseases,
 - d. Statistical analysis.
3. Stenographic work—
 - a. Letters,
 - b. Reports,
 - c. Financial accounting,
 - d. Requisitions,
 - e. Notifications.
4. Office routine—
 - a. Supplies,
 - b. Complaints.

ORGANIZATION CHART
FULL TIME LOCAL HEALTH DEPARTMENTS IN NORTH CAROLINA



ORGANIZATION CHART—NORTH CAROLINA STATE BOARD OF HEALTH





The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

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DECEMBER, 1940

No. 12

REGISTRANTS TAKING BLOOD TEST



—Courtesy the *Raleigh News and Observer*.

In the above picture, Dr. A. C. Bulla, Wake County Health Officer, is seen taking blood tests among registrants, as Dr. Carl V. Reynolds, State Health Officer, standing, looks on. This scene represents only a small segment of the 100,000 young North Carolinians who voluntarily presented themselves to their local health boards for blood tests for syphilis following the compulsory registration.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly **THE HEALTH BULLETIN**, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	German Measles	Scarlet Fever
Appendicitis	Health Education	Smallpox
Cancer	Hookworm Disease	Teeth
Constipation	Infantile Paralysis	Tuberculosis
Chickenpox	Influenza	Tuberculosis Placards
Diabetes	Malaria	Typhoid Fever
Diphtheria	Measles	Typhoid Placards
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Flies	Disposal Plants	Water Supplies
Fly Placards	Sanitary Privies	Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care	Baby's Daily Time Cards: Under 5 months;
Prenatal Letters (series of nine monthly letters)	5 to 6 months; 7, 8, and 9 months; 10
The Expectant Mother	11, and 12 months; 1 year to 19 months
Breast Feeding	19 months to 2 years.
Infant Care. The Prevention of	Diet List: 9 to 12 months; 12 to 15
Infantile Diarrhea	months; 15 to 24 months; 2 to 3
Table of Heights and Weights	years; 3 to 6 years.
	Instructions for North Carolina Midwives.

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Notes and Comment

By the EDITOR

AS December is the closing month of the year, and as this number of THE HEALTH BULLETIN will complete Volume 55, and beginning with the New Year we will start out on a new volume, we are following the custom this month now established by a number of good columnists throughout the country, and that is, we propose to give our readers a treat by letting other folks write most of the editorials in this issue. We are sure our readers will appreciate the opportunity of reading some better material than they usually find in this space.

Before getting down to the business at hand, we would like to take this opportunity to thank the numerous friends all throughout the country for taking the trouble to write us concerning the general content of the publication, including the editorial matter appearing from time to time. Their interest and their commendation as well as the occasional criticism is gratefully received, and we hope that each one of our readers will conclude with this month a happy and successful year, if any human being could be fully happy in the present state of the world at this time. We hope also that the New Year of 1941 will see a great change for the better in human progress, and

especially do we hope that the liberty-loving Christian people in the remaining civilized portions of the earth may find cause for a more hopeful attitude.

Does Your Grocer Do This?

A reader of THE HEALTH BULLETIN in one of the State's largest and finest cities has written a letter which needs no further explanation by us. We publish it just as he has written it, except his name and the name of his city is omitted because, as he points out in a note to the editor, he has observed the same thing in other cities when away from home. We hope you will read the article and if such things are carried on in the grocery store where you trade, we hope that you will bring it to the attention of the owner of the store. We quote:

"The writer has observed a common practice in many business places in the State where food and foodstuffs are sold which should at least be called to the attention of the public. The practice is so general that perhaps only few people notice it.

"In practically every meat market, grocery store, fruit store, bakery, lunch counter and other places where food of any kind is handled, there are employees who smoke cigarettes during

the process of handling the food, be it bread, cheese, sandwich material or fruit, and invariably every cigarette smoker gets saliva on his fingers from pinching the wet end of a cigarette.

"Today I was in the leading food store of ——— and noticed, as I had done many times before, one of the clerks getting up an order for a customer. As he picked up the various articles of food the wet-ended cigarette would alternate between his lips and the food counter or meat block, and there was no washing of hands at all.

"It is so commonplace with the smokers to pick, roll and mash the cigarette ends that it is mechanical with them, and they are not conscious that their unsanitary saliva-covered fingers are touching the bread, cheese, cakes and other food.

"If anybody will take the trouble to observe in practically any place, anywhere at any time, he will see just such practice as I have outlined. To say the least it is not pleasant to contemplate eating a pear or a sandwich that the clerk has practically spat upon!

"Now, as to a remedy, I suggest that it be published so the buying public becomes conscious of it—then the vendors will do something about it."

* * *

Human Rabies Dr. R. M. Buie, health officer of Guilford County, recently sent us two clippings from a local newspaper in Greensboro. The first clipping described the agonizing death of a fifteen-year-old boy who recently died in Greensboro as a result of human rabies. The second clipping was a letter from the woman president of one of the

"anti-societies." These "antis," you know, in the realm of medicine and public health are people who are against everything that scientists have worked out in the way of vaccination and other approved methods of preventing such terrible diseases as smallpox, rabies, etc. She writes, of course, from her executive offices in New York. You know, the world has to be saved in these days from New York, since London and Berlin and Paris have other business at hand just now. The writer of the letter referred to of course claims that there is no such thing as human rabies. She argues that the Pasteur treatment, therefore, when given to humans who have been bitten by rabid dogs is dangerous and causes many deaths.

Dr. Buie suggested that we comment on the very dangerous and foolish attitude assumed by this anti-society. The editor of THE HEALTH BULLETIN requested Dr. J. H. Hamilton, Director of the Board's Laboratory, to comment on the letter in the Greensboro paper and at the same time to present the record of undoubted and proved deaths occurring in North Carolina within the last twenty years unquestionably caused by human rabies. Dr. Hamilton's letter with the records follow. The record, of course, speaks for itself.

"In compliance with your request for a statement concerning rabies as a public health problem, I wish to state that it is always difficult to draw a true picture of a problem for those who do not wish to know the truth. There are none so blind as those who will not see.

"It is probably useless to tell those who hold a fixed opinion that there is no such thing as rabies that in the last twenty years there have been 67 human deaths from this disease in North

Carolina; that rabies manifests definite characteristic symptoms; that laboratory examinations of brain tissue from rabid animals show recognizable and typical microscopic changes, or that the disease can be reproduced in experimental animals showing characteristic symptoms and typical microscopic findings. Such people would not believe the fact which has been adequately demonstrated to critical but discerning people that it is possible to immunize animals and humans to rabies by means of a vaccine.

"Susceptibility to rabies varies. Approximately one-half the dogs bitten by a rabid animal will develop rabies; whereas, about one-fourth of the humans bitten by a rabid animal will develop the disease. The nature and location of the bite also influences the possibility of developing infection.

"It is unfortunate that there is an element of danger in connection with the use of antirabic vaccine. Out of every two or three thousand people receiving the vaccine one is likely to manifest some accident of treatment, usually a type of paralysis.

"The State Laboratory of Hygiene has distributed some 35,000 complete antirabic treatments. We have a record of 18 accidents of treatments—three of which resulted in death. Every one desires to be safe; unfortunately there is no such thing as absolute safety. Thinking people must face the necessity of appraising relative dangers and choose the course which is least dangerous.

"Those who have had no actual exposure to the possibility of rabies infection should not take the antirabic vaccine. Those whose exposure is in the opinion of competent observers more dangerous than the hazards of the vaccine are advised to take the treatment. Rabies vaccine is one of

our most effective prophylactic agents. We have a record of only one failure of the vaccine to protect, if a failure is considered to be the development of the disease after the administration of the vaccine has been completed.

"The antirabic vaccine distributed by the State Laboratory of Hygiene has unquestionably saved the lives of thousands of citizens of North Carolina. No person accustomed to dealing with facts could deny that statement."

* * *

HUMAN DEATHS FROM RABIES IN NORTH CAROLINA DURING 1920-1940

1920	3
1921	2
1922	2
1923	5
1924	3
1925	7
1926	8
1927	2
1928	3
1929	3
1930	3
1931	3
1932	3
1933	5
1934	1
1935	6
1936	4
1937	1
1938	1
1939	1
1940	1
<hr/>	
Total.....	67

ANIMAL HEADS EXAMINED—1934-1939
State Laboratory of Hygiene

	Total	Positive	Negative
1934	1847	827	1020
1935	2087	1007	1080
1936	1347	505	844
1937	1151	363	788
1938	996	291	705
1939	936	263	673

Killed in Crash

Early in November the item quoted below appeared in a Raleigh daily paper. It described as will be noted one more death caused by a head-on collision between two automobiles. This is so common that it seems to fail to make much impression on most minds any more. Any driver of an automobile who is on the road very much cannot fail to note the large number of drivers he meets who insist on staying in the middle of the road or certainly having much more than the half of the road to which he is entitled. It seems to be a common practice among a certain class of drivers to keep one wheel over the line that marks the middle of the road. When we see such cars coming, we do not argue with them at all. In the first place, we look for the car coming well ahead and we get just as far over and frequently clear off the pavement in order to give such roadhogs the full right of way.

We have done a lot of investigation as to what makes them do this way. We have found that one type of driver is simply too lazy to hold the wheel with both hands as is necessary to be done when he stays well on his side of the road. There is another type of driver and whether or not it is a coincidence, quite a large proportion of the numbers we meet whose cars bear a license from another state simply have the idea that the middle line is painted for them to see how near they can straddle it. Naturally, if one lazy driver meets another of the first type, or if one of our citizens meets a driver of the second type who happens to be on the highway at that time and who is also determined to straddle the line, a head-on collision is the result.

The most detestable type of course is the arrogant roadhog that makes no pretension to be anything else. He gets in the middle of the road and if

you don't get out you have to take the consequences. About the time you get off the highway just in time to meet him to let him roar by in the middle of the road, he gives you a look as if to say, "You worm, what are you doing out here on the highway?"

The reaction of this writer in meeting all such drivers is the hope that some day he may be privileged to drive one of these twenty-ton road machines at about a mile an hour and get right in the middle of the road and meet about a thousand such drivers one right after another and see them have to get out or at least get on their side of the road. It is astounding to note in the daily papers the large number of reports of head-on collisions in which the patrolman and the investigating officers report that both cars seem to be directly in the middle of the road.

Just one other point and we will quote this little obituary notice describing the accident that brought this train of thought to mind and that is, we cannot help but note the large number of out-of-state drivers of at least one of the cars involved in head-on collisions inside of North Carolina. Please read this little item which concludes these remarks for this time and when you drive a car from now on please stay on your side of the road just like we deaf people have to do.

"George G. Askew, of Henderson, was killed near here tonight when his automobile was in collision with a car occupied by Mrs. Thomas Glover and Miss Isabel Glaser, of Plainfield, N. J.

"The women sustained minor cuts, and were taken to the Maria Parham Hospital in Henderson.

"Askew was alone, driving toward Raleigh on United States Highway No. 1 a mile north of Franklinton when the crash occurred. Chief of Police J. A. Dennis said the cars met practically head-on."

North Carolina's Anti-Syphilis Program

By CARL V. REYNOLDS, M.D.
Secretary and State Health Officer

THE North Carolina State Board of Health is, at this writing, in the midst of what bids fair to be one of the most far-reaching case-finding and epidemiological studies in connection with venereal disease control ever undertaken in the United States. In referring to this gigantic undertaking, Governor Clyde R. Hoey said, as he addressed a state-wide meeting of county, district and city health officers in Raleigh to formulate plans for its execution: "I ask you to envision the beneficial results that will accrue to humanity five, ten, yes even fifty years from now!"

The above paragraph has reference to a serologic survey to determine the incidence of syphilis among the 448,555 young men in North Carolina, between the ages of 21 and 36, who registered for the draft on October 16.

There are two outstanding facts about this program that stand out in bold relief. The submission to these tests was purely voluntary, and the program was launched and has proceeded with a precision that fully justifies the detailed preparations that had been made to insure its success.

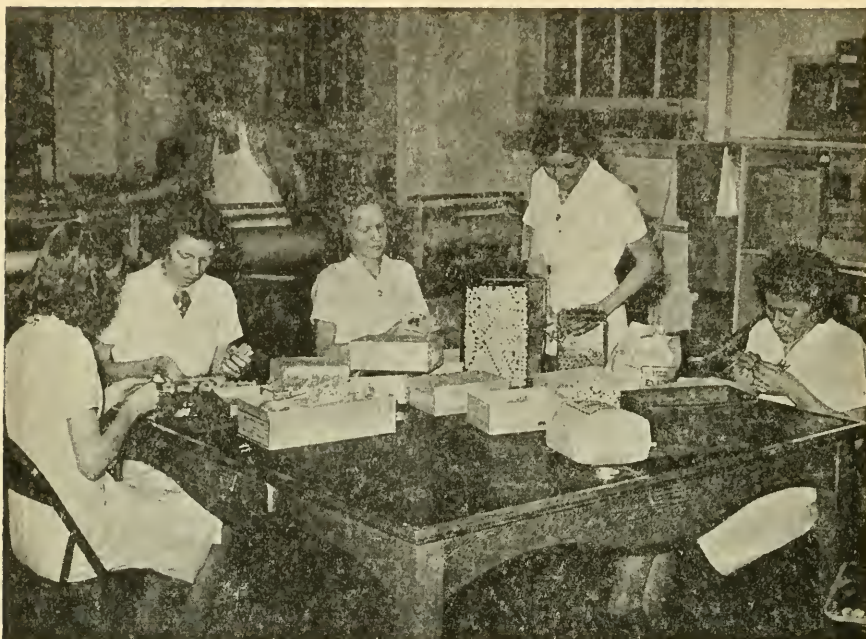
Without going into details, it is interesting to note that within a week after registration day more than 100,000 blood samples had been sent to the State Laboratory of Hygiene. By 11 o'clock on registration day it was apparent that the program was on the way to success. At that hour fifteen county health officers had either telegraphed or telephoned to Raleigh for additional tubes, and special runners had come from half a dozen counties,

some 100 miles distant. Material had been sent out for 90,000 tests, but when it was seen that the number would greatly exceed that figure, additional personnel was employed to rush additional supplies. It might be stated in this connection that the more than 100,000 samples referred to above does not represent the total, as the number continues to grow.

Being at my office in Raleigh on registration day, I visited the quarters of the Wake County Board of Health, in charge of Dr. A. C. Bulla, in company with representatives of the press. On my arrival I saw a long line of registrants awaiting their turns to have blood samples taken, on a purely voluntary basis. Going inside, I saw Dr. Bulla busily engaged in taking the samples from these men.

In Wake County, in which the Capital City of Raleigh is located, 1,860 young men voluntarily submitted to the serologic test, and I am told that lines similar to that which I witnessed—and, in some instances, even larger—could be seen in nearly all the 79 counties of the State that have organized, full-time health departments, which give protection to 95 per cent of our people.

Figures from the various health officers are coming in at this time, and these will be coordinated and made into a general picture of this great defense movement which the North Carolina State Board of Health is sponsoring. It is interesting to note, for example, that in Granville County, where Dr. Ballard Norwood is the health officer, 2,875 of the 3,415 young men who reg-



—Courtesy the *Raleigh Times*.

Preceding Registration Day, workers in the State Board of Health's Laboratory of Hygiene worked long and hard to send out supplies for North Carolina's undertaking. The above picture shows these workers busy unpacking a part of the samples that began pouring into the Laboratory within 12 hours after registration.

istered presented themselves for examination. This number, with an added 500 who already had taken the test under Dr. Norwood's supervision, gave that county a percentage of 98.8 per cent. In Northampton, where Dr. W. Raleigh Parker is the health officer, there were 2,866 tests made among the 3,093 who registered, or 92.66 per cent.

Totals from these counties are not given to single them out to the exclusion of other counties where magnificent success was achieved, but merely to furnish an index to the public health volume that is being written at this time as North Carolina's contribution to national defense.

I might further point out that, although this survey is based on findings among those who registered for mili-

tary service at their country's call, the effects will be more far-reaching than the public realizes. The performance of this task on registrants will not only benefit those who are finally inducted into the armed forces of the nation, but will open the doors to a study among the civilian population that will serve as a stimulus for the eradication of syphilis as a measure necessary to the prosecution of peaceful pursuits—in the office, on the farm and in the factory. Comparatively few of those who registered may be actually needed in the fighting forces, but each of these young men has a very important role in our social and economic life and in the conduct of everyday affairs along all lines.

It is not my intention at this time to go into a recital of the functions of the North Carolina State Board of Health, whose efforts, broadly speaking, are duplicated in practically all the states with well-organized health departments. But the purpose of this article is to give those who may not be familiar with this State's determined fight against venereal diseases an idea of just how we are proceeding to accomplish the desired results, which, among other things, include a determination to make North Carolina as free from syphilis as those Scandinavian countries, particularly Sweden, where the disease is negligible. Sweden carried its objective by tearing the mask off syphilis, putting it in the category with other contagious, infectious, controllable diseases, and then applying the needed remedy. That is just what North Carolina proposes to do.

What is now being accomplished does not constitute a "cause" but, rather, a "result."

For several years this State, through the benefaction of the Reynolds Foundation, the use of Federal and other funds made available for this purpose, has been engaged in a definite program looking toward the control and eradication of venereal diseases.

To help the reader visualize the progress we have made I might point out that during the biennium of 1928-1930 there were only 8,542 cases of syphilis reported to the State Board of Health. During that same period the Laboratory of Hygiene ran 119,860 Wassermann tests. The number of cases reported from the beginning of 1936 through 1939 was 131,984, with only 25,101 the first year, emphasizing the rapid increase that has occurred. During the same period there were 1,014,229 serologic tests made at the Laboratory, divided as follows: 1936—

136,587; 1937—201,932; 1938—304,851, and 1939—370,959. Add the number that will result from the voluntary submission of registrants to these tests and you will get a still clearer picture of the progress referred to. These tests, I might add, will increase the number of tests run daily through the Laboratory from 1,500 a day to more than 4,000, roughly speaking.

North Carolina now has 276 public health clinics for the treatment of venereal diseases in the 79 organized counties.

The number of treatments given in our State—Supervised clinics from January, 1936, through December, 1939, was 1,537,334, divided thus: 1936—119,581; 1937—192,076; 1938—410,852, and 1939—814,825. This allows the reader to visualize this phase of our venereal disease program in North Carolina.

In addition to its normal activities in this field of endeavor, the North Carolina State Board of Health, toward the end of 1939, working in cooperation with the State Highway and Public Works Commission, made a survey of 9,533 prisoners then in eighty camps throughout the State. This showed that 2,229 individuals reacted positively to serologic tests, being 23.3 per cent of the total prison population surveyed.

By the time the 1939 State Legislature met we were able, because of an enlightened public consciousness of the importance of these measures, to secure the passage of two outstanding laws designed to help control syphilis. One provides that no person in North Carolina shall marry until he or she has submitted to a serologic test and that where the result is positive the marriage must be postponed until the in-

fectured person is cured. The other provides for blood tests to be made of all prospective mothers. This legislation could never have been enacted except following a campaign of education.

We have accomplished much in discovering the sources of syphilis. We have made one extensive survey and are now engaged in another and still larger one which promises to prove successful, in addition to our normal ac-

tivities, but unless we carry on a rigid follow-up campaign our efforts will have been in vain. We have the machinery for doing this. I cannot place too much emphasis on the importance of this phase of the work, because as "eternal vigilance is the price of liberty," so it takes constant effort to keep humanity free from those things that hurt and harrass the body and, hence, impede spiritual and moral as well as physical development.

The Vegetable Man and His Friends

(NOTE.—This little dramatization was worked out as one of the activities of a farm unit carried out by the third grade of the Dana High School, Henderson County. Teacher, Miss Mary Ann Leslie.)

CHARACTERS

1. Farmer Brown
2. The Vegetable Man
3. Vegetables

Tomato

Carrot

Lettuce

Spinach

Onion

Pepper

4. Five Sunbeams

5. Five Raindrops

6. Six Farm Boys

7. Six Sunbonnet Girls

(Prologue. The third grade has been studying about farm life this year. Many of us live on the farm and it is interesting to learn how we make a living. We have read many interesting stories about the things that live on the farm. We have colored pictures, made free-hand drawings, modeled animals of clay, and written stories about our farm pets.

We decided to write a little dramatization about the things we liked best. We chose the vegetables because they are so important in helping us to build strong and healthy bodies. We have called this little dramatization "The

Vegetable Man and His Friends." We believe when you have heard this little playlet you, too, will decide you like vegetables and will choose them as a part of your diet.)

Setting: The Garden.

Time: A spring day.

Place: An open stage with children placed in concealed boxes, dressed as vegetables. As they are properly cared for their growth is apparent.

(Enter farmer, singing merrily "The Farmer In the Dell" as he gently places a seed into each box. After planting seeds comes to front of stage, recites poem.)

This is how the vegetables grow,
I have watched them and I know.
First above the ground is seen
A tiny blade of purest green
Reaching up and peeping forth—
East and west and south and north.

(Little plants peep up from the boxes.)

Then the sunbeams find their way
To the sleeping buds and say,
We're the children of the Sun
Sent to wake thee, little one.

(Sunbeams skip lightly through the vegetable rows, sending their bright rays upon the tiny plants.)

Singing Sunbeams, page 60, Music Hour.

(Farmer continues.)

Little raindrops, light and air,
Haste to come their work to share.

(Enter raindrops who frighten the sunbeams away. They march through the garden watering the vegetables and singing gaily "The Little Raindrop Soldiers"—Progressive Music Series, page 35.)

(Enter Farm Boys, singing gaily, "Old McDonald Had a Farm"—Music Hour. While they work the vegetables, followed by Sunbonnet Girls, file through the rows, straightening up the Vegetables. Both sing "Sun Bonnet Sally" and "Overall Jim.") Vegetables begin to talk.

(Lettuce)

I am lettuce. I was just a tiny seed. Farmer Brown planted me. First the little Sunbeams sent their bright rays upon me, and I began to grow. Then the raindrops watered me. Next some little people came and worked me, and now I am quite grown. I am good to eat. Every one should like me. I am part of the sandwiches that healthy children bring to school. If you will eat me often I shall make you healthy and strong.

(Spinach)

I know you have heard of me before, and should know me quite well. I am the spinach that grew in Farmer Brown's vegetable garden. I help to build strong bones and teeth. The more you eat me the more you like me.

(Pepper)

You needn't think you are so fine. I'm good to eat all of the time. Just look at my nice color! All wise people grow me in their gardens. Miss Case grows thousands and thousands of me every year, and just think how much money she makes. I'll bet she doesn't even have to teach school for a living unless she wants to.

(Onion, speaking to Pepper)

Now just because you are hot and burny you needn't be so funny. Onions are always fine. Mr. Jervis eats me all of the time. I heard him say he ate a bushel of me last year, and Frank Fitzsimmons thinks I'm a dear.

(Carrot)

Well, I may not be so fine as my friends, Mr. Pepper and Onion, but I am always considered a valuable part of any healthy child's diet. If you will eat me often I shall do my best to make you healthy.

(Tomato)

I'm so glad Mr. Brown grew me in his garden. I am always ready to go home with the vegetable shopper who is wise enough to choose me and serve as food for those who would eat me. I am very pleasant to take, both as a food and a drink, and I can be canned as a storehouse of sunshine vitamins for children who cannot have me fresh from the garden in winter.

(A noise is heard outside. A very clumsy vegetable man appears wearing a suit to represent the various vegetables.)

(Vegetables speak)

Pray tell us who that strange creature is?

(Children, laughing)

That must be the Vegetable Man.

(Vegetable Man)

Yes, yes; the very one whom the third grade wrote a song about. Children, how about singing your song to me? I need something to cheer me up. (Children sing "The Vegetable Man.")

(Vegetable Man)

Quite good, my dears. I see you have learned the value of fresh vegetables in your diet, and I hope when you go home you will put into practice the health rules you have learned at school. And please remember that by choosing a fresh vegetable diet you can never go wrong. So long!

(Curtain.)

THE VEGETABLE MAN

(To the tune of the Gingerbread Man—

Progressive Series, Book 1)

Sing humpty, dumpty, dickory dan;
Sing heigh and sing ho
For the Vegetable Man.
His farm is so neat
And his smile is so sweet
He wears Vegetable shoes
On his Vegetable feet—
He wears Vegetable shoes
On his Vegetable feet.

His head is an apple
So healthful to eat
His body a melon
So juicy and sweet.
His arms are of carrots
So healthy and fine,
His feet when all buttered
Are good all the time—
His feet when all buttered
Are good all the time.

Health Department in a Flood Disaster

By ROBERT F. YOUNG, M.D.

Halifax County Health Officer

AND the Rains Came"—and continued to come in torrential downpours until the treacherous Roanoke River had become a roaring wall of yellow water fifty-eight feet high, spreading beyond its banks to cover 29,230 acres of splendid crops, 960 homes, and to drive 4,800 persons to higher land in four counties.

Even the veterans of floods in the past stood and looked on in a daze, for this river, named by the Indians long ago "The River of Death," had suddenly become a raging monster destroying everything in its path.

Those of us in the Health Department knew we needed to do something and realized we would need assistance

to cope with such a disaster as had suddenly befallen us, but for fully a day, it seemed, we were utterly helpless and unable to formulate any definite, concrete appeal for help, which was doubly confusing since the State Health Officer had already wired us to advise him of our needs.

However, as the waters rose about us like something magic the Halifax County Health Department joined hands with the local Red Cross Chapter and the "fight was on."

Refugees were pouring into Weldon, Scotland Neck and other points in the county without food or shelter. Therefore, the first step was the establishment of refugee camps for the white

and colored victims of this catastrophe. The schools with their cafeterias naturally answered this purpose best. Rooms were cleared for cots and beds. Cooks and helpers were secured, and nurses were placed in charge of each camp to maintain a constant vigilance for communicable diseases, and to administer to injuries and ailments of these people.

A physician was placed on call for each refugee camp. The nurses made thorough inspections of all refugees twice daily, and persons with any temperature or significant complaints were referred to the physicians for a further check-up.

To maintain as clean and healthy an environment as possible a sanitary inspector was detailed to inspect these camps twice daily and to make any corrections that were needed.

With the water plant in Weldon under river water and the mains consequently closed, the next paradoxical problem was—"Water everywhere but not a drop to drink." The neighboring city of Roanoke Rapids came to our rescue, however, and offered to furnish water, while tank trucks were secured from the Highway Department, sterilized, and dispatched for this water which was at first given out five gallons per family because of a shortage of trucks. This supply of water was supplemented by a mobile emergency filtering plant from Fort Bragg which supplied 144,000 gallons of filtered water per twenty-four hours.

Circulars warning the population to "boil all water ten minutes" and to be "vaccinated against typhoid fever immediately" were distributed to every household in Weldon and vicinity by the Boy Scouts.

A state of emergency was declared at all refugee camps, and the ruling was made that every refugee must be

vaccinated against typhoid and paratyphoid fever or not eat. This worked beautifully. All children in the camps were also vaccinated against diphtheria and smallpox who had not been immunized recently. There were a lot of sore arms, temperature, and headaches, but the nurses and physicians ministered to their needs.

At one large camp where many of these folks had never been vaccinated before, they became quite alarmed at so many headaches, chills, and other reactions, whereupon we invited them into the auditorium and started them singing Negro spirituals. After the songs we talked to them about the evils of "Old Man River" and assured them these vaccinations were for the best. This allayed their fears, and all was well.

Other vaccination clinics were set up at strategic points for those who were not flood refugees but who had not been vaccinated within the past two years. We warned the people not to depend on the third year of their typhoid immunity in a time as abnormal as a flood, with this contaminated water everywhere in the Roanoke River watershed. The total amount of typhoid vaccine ordered for the clinics conducted by the Health Department and private physicians was 2,900 10 c.c. vials. There were 14,395 persons immunized, while over 200 children were vaccinated for diphtheria and smallpox. These immunizations include those given by the Health Department and private physicians.

Back in the camps we began giving daily prophylactic doses of quinine to prevent a wave of malaria. A sharp lookout was also maintained for any injuries that would require tetanus antitoxin.

By this time Dr. Emmett Lupton from the State Board of Health had come to our rescue and had assumed full charge of the largest refugee camp, that at Scotland Neck. He was given three Red Cross nurses which, with Miss Beam from the State Board of Health, allowed him two day nurses and two night nurses. There were threatened abortions, cystitis, malaria, and many other ailments, but not a single case of enteritis developed while Dr. Lupton was in charge. All the babies were kept on evaporated milk feedings under his supervision.

The Public Health force at Weldon was augmented by Miss Webb and Miss Winstead furnished by the State Board of Health by two local nurses, giving us eight nurses besides the four at Scotland Neck. Also Miss Ruth Norman, a nurse from New Jersey, worked with us two days during the crest of the flood.

With the refugees under control and the immunization clinics established, the next problems raising their ugly heads were (1) the sterilization of the water plant and system; (2) the cleaning up of all the debris and filth that had been left at our doors by the receding waters; (3) cleaning and sterilization of homes that had been flooded; (4) the sterilization of all the wells that had been under water; and (5) the repair and replacement of sanitary privies.

Mr. McKimmon, from the Division of Sanitary Engineering of the State Board of Health, was on hand long before the water plant was clear of river water, advising the local authorities of the steps necessary to take in order to put the system into operation with a safe supply of water. Our experience in this flood proved that it is wise not to take any "short-cuts" in putting the

water system into operation, but to make certain the system is sterile before giving the "all clear" signal. This was the advice given by Mr. McKimmon, and it proved its weight in gold, even though the citizens became very impatient before they got water through the mains.

Mr. Williams was here to assist in directing the one hundred WPA workers in cleaning up the debris and in oiling and draining the impounded bodies of water. He also ably directed the sterilization of the many flooded wells. Two pounds of chlorinated lime was used in each well. After standing for twenty-four hours this water was pumped off before any was allowed to be used.

Mr. Jessup, who was among the first to come to our rescue, directed the survey that was necessary to determine the number of privies that would have to be replaced. The resanitation of these homes was of the utmost importance. Fortunately, through the persistent efforts of the State Board of Health the Red Cross agreed to replace all these privies where it was felt that the landowner or tenant could not afford this expense. It was found that three hundred privies were needed to replace those destroyed in the flood, whereupon the material was promptly ordered and the project was under way. This sounds easy, but there was plenty of strife and struggle behind it all, most of which was shouldered by the State Board of Health.

It was recommended that all homes which had been flooded be thoroughly scrubbed with hot, soapy water with about two and one-half teaspoonfuls of H.T.H. or seven teaspoonfuls of chlorinated lime per gallon of water. All furniture had to be cleaned with hot, soapy water. These instructions

were distributed on mimeographed sheets by the Boy Scouts and Sanitary Inspectors. As far as possible these homes were inspected by the Health Department before being reinhabited.

As the homes were placed back in order the refugees were taken out of the refugee camps as quickly as possible in order to reduce the chances of herd diseases becoming rampant.

At the present writing there has not been a single case of typhoid fever, diphtheria, or smallpox reported in the flood areas of this county, but be that as it may, the natives now reverently refer to the Roanoke River as "Mr. Roanoke."

CONCLUSIONS

1. When possible refugee camps should be selected at once where food can be prepared and where water and sewage facilities for men and women are available.

2. When injuries and sickness are at a minimum at least one trained nurse, preferably a public health nurse, is needed for each one hundred refugees.

3. When as many as four hundred refugees are in one camp, a full-time resident physician is an absolute necessity, and at least one physician should be immediately placed on call for each camp where there are fewer refugees than four hundred.

4. A Sanitary Inspector should be assigned to each camp.

5. Inspections by the nurses of the refugees in each camp should be made twice daily for temperature, signs or symptoms of communicable diseases, and for injuries and a full report given the physician in charge.

6. There should be an adequate supply of typhoid, diphtheria and smallpox vaccine as well as tetanus antitoxin.

7. Needless to say, immunizations should be started at once against typhoid fever, diphtheria, and smallpox.

8. When the water supply is involved, all water should be boiled at least ten minutes, and the State Health Department should be notified when an engineer should be on hand to supervise the re-establishing of a water supply.

9. The local Health Department should immediately call on the State Health Department for a consultant in maintaining as clean and healthy environment as possible and to supervise the clean-up campaign.

10. The State Health Department should be immediately contacted for their representative to supervise the re-sanitation project.

11. At least one hundred pounds of H.T.H. should be on hand for every five hundred refugees involved. This item should be obtained early through the Red Cross when possible, as it is usually very limited in any given locality.

12. Each well should be sterilized with one-half pound of H.T.H., and all flooded homes sterilized with a solution made up of two and one-half teaspoonfuls of H.T.H. to each gallon of water.

13. The Health Officer should order that the above measures be carried out rather than request them. A disaster is no time for "pussyfooting."

CHRISTMAS SEALS



Help to Protect Your Home from Tuberculosis Within Our Power

By FRANK W. WEBSTER
Managing Director, N. C. Tuberculosis Association

HERE the little Christmas Seal is—a square of paper you can cover with your thumb. It is about as insignificant as a diamond would be. It glitters and shines, and then goes on to tell the world of better things than vanity—that instead of decorating yourself you are willing to decorate others with the precious thing called health.

You might call the Seal a personal medal, in a way. Only instead of putting it in a bureau drawer you have the fun of showing it to Aunt Kate, to Cousin Jill and Will in far-off states. And to all those scattered friends you only write to at Christmas time. You can stick it on a letter with gusto, for this medal tells every one you are a person who wants the next generation and the one after that to be healthy.

It's a fine thing to buy power for a dollar or two. Certainly it's a lot more than we usually get for a dollar these days. Perhaps that's what makes buying the Seals so satisfactory. With all the abstract and particular fights we have to let others carry on for us, this is one fight where we can get in and finish up the thing ourselves.

In our own grasp we have the power to reduce tuberculosis to just an archaic word in an encyclopedia. Or we can go on letting it kill more girls and women between the ages of 15 and 45 than any other disease.

The sale of these little Seals will help to completely eradicate tuberculosis. Buy them





